Harvard Oriental Series 40

MATERIALS FOR THE STUDY OF NAVYA-NYĀYA LOGIC

Daniel H.H. Ingalls

HARVARD ORIENTAL SERIES

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VOLUME FORTY

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DANIEL HENRY HOLMES INGALLS

MOTILAL BANARSIDASS
Delhi Varanasi Patna
Bangalore Madras

First Published 1951
First Indian Reprint: Delhi, 1988

MOTILAL BANARSIDASS
Bungalow Road, Jawahar Nagar, Delhi 110 007
Branches
Chowk, Varanasi 221 001
Ashok Rajpath, Patna 800 004
24 Race Course Road, Bangalore 560 001
120, Royapettah High Road, Mylapore, Madras 600 004

ISBN: 81-208-0384-1

By arrangement with the Harvard University Press

PRINTED IN INDIA
BY JAINENDRA PRAKASH JAIN AT SHRI JAINENDRA PRESS, A-45 NARAINA INDUSTRIAL AREA, PHASE I, NEW DELHI 110 028 AND PUBLISHED BY NARENDRA PRAKASH JAIN FOR MOTILAL BANARSIDASS, DELHI 110 007.

ACKNOWLEDGMENTS

I first studied Navya-nyāya logic in Calcutta in 1941 under MM. Śrī Kālīpada Tarkāchārya, Lecturer in Nyāya at the Sanskrit College. It is a pleasure to express here my thanks to a teacher who carried on so worthily the tradition of Gautama and of Gaṅgeśa. His patience with me and his kindliness were as inexhaustible as his knowledge. My thanks are due also to Dr. Surendranath Dasgupta, at the time of my visit Principal of the Sanskrit College and Research Institute, for his having greatly facilitated my studies.

Of compatriots, my deepest obligation is to my teacher, Professor Walter E. Clark of Harvard University, from whom I have received constant help and encouragement. In particular I must thank him for the generous care with which he has read this book in manuscript and improved it by his corrections.

Professor Willard Van Orman Quine of the Harvard Department of Philosophy was so kind as to read through an earlier draft of Section II. On one or two specific points I have acknowledged his aid in a footnote, but for his general criticism of the section, which has influenced greatly its final form, I can only thank him here.

Of previous workers in the same field of inquiry, I have derived most help from Dr. Saileswar Sen, who has published a translation of about one-third of the Mathura text which follows. In my writing of Section I, I have found especially useful MM. Phaṇibhūṣaṇa Tarkavāgīśa's Introduction to his Nyāya-paricaya. For the names of others without whose work my own would be more faulty than it is, I refer the reader to the list of works of reference.

Finally I express my thanks to the Society of Fellows, which supported my studies in India and which enabled me after an interruption caused by the War to continue these studies at Harvard to their present long-delayed result.

DANIEL H. H. INGALLS

Society of Fellows
Harvard University
1949

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INTRODUCTION

The usage of the learned varies as to just which Indian philosophers may be said to belong to the school of Navya-nyāya (the New Nyāya). For convenience, in this book I regard all Naiyāyikas from the time of Gaṅgeśa (thirteenth century) to the present as Navya-naiyāyikas. These philosophers have written on logic, epistemology, physics, and grammar, but logic has been the most distinctive of their disciplines. It is in logic that they created a new style and method in Indian philosophy.

The mass of Navya-nyāya writings on logic is enormous, yet almost none of this is available in a Western language. Western Sanskritists have been repelled by the complexities of Navya-nyāya style, while the Indian pandits trained in this style are almost never trained in Western logic.

The purpose of this book is to present a small number of Navya-nyāya texts in such fashion that they may be understood by a Westerner. This is not primarily a comparative study, but I have drawn comparisons to Aristotelian and mathematical logic when it seemed to me that a particular Navya-nyāya theory or technique might be elucidated thereby.

The study of Navya-nyāya needs no apology to an Indianist. A great part of Indian philosophy since the thirteenth century is unintelligible without it. But more than this, I believe there is much in Navya-nyāya that will also prove of interest to the general student of philosophy and logic. I shall enumerate some points which I consider to be of such general interest, adding in parentheses references to Section II where these points are discussed in detail. First, I must admit that the list and the judgments it contains are preliminary. A general evaluation of this system of logic cannot be made until many more of its texts are translated and explained.

The metaphysical basis of Navya-nyāya is thoroughly realistic, yet its logic is a formal logic showing an unusual power of abstraction. Its realism may be seen in its dissatisfaction with the mere analysis of words. The Naiyāyika always tries to push further back, to explain the relations of the things themselves. Thus his logic deals very little with propositions; it deals rather with 'knowledges', which when valid are said to represent facts as they actually are (§ 7). Again, Navya-nyāya does not distinguish names from descriptions, it distinguishes the entities that describe from the entities described (§ 20). Occasionally this realism results in confusion (§ 42), but not often. Both realism and the power of abstraction may be seen at their extreme in the Navya-nyāya method of universalizing. Quantifiers ('all', 'some', 'any', etc.) are almost never used. The facts which we express by quantification, Navya-nyāya expresses by means of abstract properties and the combination of negatives (§§ 22, 28, 32).

There are a number of points where Navya-nyāya appears definitely superior to Aristotelian logic. Among these are its understanding of conjunction, alternation, and their negates (§§ 35, 36), and of the class corollary of De Morgan's law (§ 38). Navya-nyāya never confuses the attribute of a class with the attribute of its members (§ 50). In its concept of number it seems to anticipate mathematical logic by several centuries (§ 51).

I do not wish to exaggerate the virtues of Navya-nyāya. Certainly it has its faults. Much, however, that will seem to the modern logician perverse or foolish in the following pages, is Navya-nyāya's inheritance from the Old School, and is accepted by only the conservative Navya-naiyāyikas.

To this ancient tradition belong the hampering system of categories (§§ 13, 21), the illogical concepts of contact (§ 48) and reality (§ 26), the confusion of abstract inherence with an instance of inherence (§ 50).

The later or radical school of Navya-nyāya founded by Raghunātha does away with many of these faults. Indeed, I believe that Raghunātha, if his works were known outside India, would be generally recognized as a great logician.

Navya-nyāya never invented the use of symbols. It invented instead a wonderfully complex system of clichés, by which it expresses a great deal that we would never think of expressing without symbols. It would be unfair to call this a fault, since, except by the ancient Stoics, symbols were nowhere used in logic before the nineteenth century. The clichés of Navya-nyāya, if they are cumbrous in comparison with the symbols of modern logic, are certainly superior as a logical instrument to the language of ordinary discourse.

A few words are necessary with regard to the details of this book.

I have gathered together in Section I all I could concerning the life and writings of the authors here represented. I have given considerable attention to local traditions, not because I credit them with any high degree of veracity, but because there are so few other sources of information. Some of the Raghunātha traditions, at any rate, have the ring of truth.

Section II deals specifically with Navya-nyāya logic, but it has been impossible for me entirely to avoid extralogical questions. In particular, at the beginning some explanation of Navya-nyāya epistemology seemed necessary. A brief account is also given of the traditional system of categories and of Raghunātha's objections to it.

When speaking of modern logic I have sought to avoid all questions of controversy. Thus I have not raised, much less answered, such questions as just what the mathematical logicians mean by 'class' or what the philosophers of logic mean by 'existence'. I have used W. V. Quine's *Mathematical Logic* as a textbook in referring to theories of mathematical logic, and it is largely on this account that

I speak of 'mathematical' rather than 'symbolic' or 'relational' logic, all of which terms are now used to refer to the same science.

A number of symbols are introduced in the course of Section II in order to express conveniently certain Navya-nyāya terms and phrases. These symbols are explained as each new one occurs. A few further ones are added in Section IV. A list of all symbols employed, with indication of their meanings, is given at the end of Section II (§ 59).

As regards the text of the three selections here printed, Gaṅgeśa's definitions are taken from the Kashi edition of the *Vyāpti-pañcaka-rahasya*. The B.I. edition shows no variants. The text of Raghunātha is taken from the Chowkhambā edition of the *Jāgadīśī*. Variants from the same series' edition of the Gādādharī are noticed. The text of Mathura's *Vyāpti-pañcaka-rahasya* is an eclectic one drawn from both the Kashi and the B.I. editions. Where these editions disagree in other than trivial matters of spelling and *sandhi*, the reading not accepted is always given in a note.

Section I

BIOGRAPHICAL NOTES

1. *Gaṅgeśopādhyāya* (thirteenth century)

The date of Gaṅgeśa has been the subject of much discussion. It is almost certain that he lived in the thirteenth century, but a more exact date cannot yet be given. The evidence is as follows:

He cannot have lived earlier than Śrī Harṣa, whose great work, the *Khaṇḍana-khaṇḍa-khādya,* he quotes.[1] Śrī Harṣa was patronized by King Jaycand of Kanauj[2] (reg. A.D. 1170–1194). There exists a manuscript of Śrī Harṣa's work dated La Saṃ 116 (c. A.D. 1233).[3]

The Asiatic Society of Bengal possesses a manuscript of the *Kusumâñjali-prakāśa,* a work by Gaṅgeśa's son Vardhamānopādhyāya. The older portion of this MS. has been dated on epigraphic evidence as between A.D. 1300 and 1360.[4]

The dates of Harṣa and of the Vardhamāna MS. furnish the closest unquestionable limits for Gaṅgeśa's date.[5] One must discard the earlier terminus ad quem accepted by Chakravarti and others, which was based on a misconception of the date of Jayadeva Pakṣadhara (see below).

It is likely that Upādhyāya is to be interpreted as a gentile name (the modern Ojhā) rather than as a title or honorific.[6] The tradition that Gaṅgeśa was born in the village of Karion (Sanskrit Korāna)[7] about 12 miles southeast of Darbhanga is not improbable. Certainly Mithilā (the province of Tirhut, of which Darbhanga was once the capital) remained for some 250 years the center of study of Gaṅgeśa's work. Gaṅgeśa was the father of Vardhamānopādhyāya, a Naiyāyika only less

[1] *T.C.*, II, 233, noticed by Chakravarti, p. 265.

[2] Chakravarti, p. 264.

[3] *Cat. Durb. Lib.*, p. 35.

[4] An account of the MS. is given by Singh, pp. 179–180. He refers to the MS. as No. 794 of the Society's collection. I presume this is the same MS. as that listed by Mitra, vol. III, p. 176, No. 1206.

[5] The mention of Vardhamāna by Mādhavācārya (second half of fourteenth century) noticed by Chakravarti (p. 266) and Sen (p. 12) would not fix the date of Gaṅgeśa more exactly in any case, but the reference is quite likely to the grammarian Vardhamāna, not to Gaṅgeśa's son (cf. Gopīnāth, III, 135).

[6] Chakravarti, p. 265.

[7] Satischandra, p. 405; Dhuṇḍirāja Śāstri in *Gādā*. Bhūmikā, p. 5.

famous than Gaṅgeśa himself.[8] Beyond these meager facts nothing is known of Gaṅgeśa's life.[9]

The *Tattva-cintāmaṇi* is Gaṅgeśa's great work. Satischandra Vidyābhūṣaṇa has written a brief summary of its contents,[10] but as yet no one has attempted a translation. The few lines from the *T.C.* that form the basis of the commentaries translated below are too brief to warrant a general discussion here of its philosophy, even if I were capable of it. However, a few words about its historical position may be useful.

The *T.C.* is a systematic account of epistemology, logic, and the philosophy of grammar. Other subjects, such as the proofs of God, are treated incidentally. It is arranged in four Books, bearing the titles '*Pratyakṣa*', '*Anumāna*', '*Upamāna*' and '*Śabda*', terms which will be explained below in Section II. In the *T.C.*, Gaṅgeśa refers to his own teachings as the *New* Nyāya,[11] as distinguished from the Old Nyāya that begins with the Nyāya-sūtras and has for its last great teachers the tenth-century masters Udayana, Jayānta, and Bhāsarvajña.

This term New Nyāya is not to be understood as implying any great originality in theory on Gaṅgeśa's part, but rather an originality in method. The great revolution in the doctrines of the school comes with Raghunātha. Some of Raghunātha's innovations will be pointed out in Section II. Because of the originality of Raghunātha's work, many Indians use the term Navya-nyāya only of him and his followers.[12] I do not follow this practice, simply because it leaves no convenient term by which to refer to Gaṅgeśa and his commentators of the fourteenth and fifteenth centuries.

In what does the newness of Gaṅgeśa's method consist? His work differs from the oldest Nyāya in that he accepts many tenets of the Vaiśeṣika school, and in his arrangement of Nyāya teachings under four headings rather than under the 16 subjects (*padārtha*) of the Old Nyāya. But in both these respects others had anticipated his reforms.[13] More significant is the change in the direction of Gaṅgeśa's artillery. The Old Nyāya had directed its arguments, to a great extent, against Buddhism. Gaṅgeśa, living in an age when Buddhism had almost disappeared in India, directs his attacks more against the Mīmāṃsā, the Vedānta,

[8] For Vardhamāna and his writings, cf. Chakravarti, pp. 265–267; Satischandra, pp. 454–455; Gopīnāth, III, 133–135.

[9] Such traditions as do exist are contradictory: e.g., "Even in childhood he was skilled in books of logic," Dhuṇḍirāja Śāstri in *Gādā*. Bhūmikā; "It is said that Gaṅgeśa while young was altogether illiterate," Satischandra, p. 405.

[10] *J.A.S.B.*, New Series, XIV, and reprinted in his *History of Indian Logic*, pp. 407–453.

[11] See, e.g., *T.C.*, IV, p. 699, line 1.

[12] This, for instance, is the practice of the *Nyāya-koṣa*.

[13] The syncretism with the Vaiśeṣika was begun by Udayana. Bhāsarvajña reduced the 16 *padārthas* to three. Cf. Keith, pp. 30–31.

and other living schools of philosophy. But above all, the newness of Gaṅgeśa's method is a newness of style and of organization. He is far more precise, more careful to define his terms, than were his predecessors. These virtues of his work are responsible for the fact that perhaps half of Navya-nyāya literature is based either directly on the *T.C.* or on a commentary on the *T.C.*

Although Navya-naiyāyikas have continued to improve their techniques almost down to present times, the boundaries of their subject matter are set by the *T.C.* and by the Vaiśeṣika commentaries of Gaṅgeśa's son. To this statement there are a few exceptions; some new ground, for example, was broken by Raghunātha. On the other hand, in the last period of the school's creativeness, interest began to narrow down to the subject of inference, that is, to formal logic alone. I hope to show below that Raghunātha commented on the whole of the *T.C.*, but his commentators Jagadīśa and Gadādhara (seventeenth century) appear to have commented on only the first two books. A comparison of the number of extant MSS. of their commentaries on Book II (on logic) with those on Book I (on epistemology) shows the direction that Navya-nyāya interest has taken since their time.[14]

There exists in manuscript another, small work of Gaṅgeśa, called the *Lakṣaṇa-mañjarī*,[15] which appears to cover part of the ground covered by the *T.C.*

2. *Jayadeva Pakṣadhara* (c. A.D. 1425–c. 1500)

For more than two centuries after Gaṅgeśa's death, Mithilā remained the center of Nyāya studies in India. Mithilā was singularly free from Muslim tyranny during the centuries that preceded the enlightened rule of the Moguls.[16] In many respects this province furnished a link between the Hindu culture of pre-Muhammadan India and the revival of this culture in the Northeast under the Mogul Empire. Mithilā was a center of *smṛti* (ritual) as well as of Nyāya. On a popular level, the new theistic movement produced a sudden blossoming of vernacular poetry in Mithilā in the fifteenth century. This movement was not without its influence on the great Vaiṣṇava revival in Bengal that culminates with Chaitanya (1485–1533).

[14] MSS. of their commentaries on Book I are very rare and perhaps in no single case complete. For Jagadīśa, cf. Bhand. 1881–2, No. 400. For Gadādhara, cf. *Cat. I.O.*, Nos. 1885, 5791; *Cat. Tanjore* Nos. 6126, 6133. The editor of the Tanjore catalogue errs in supposing No. 6126 to have been printed in the Chowkhambā series; only *Gādā.* on Book II is there printed.

[15] Śāstri, Second Series, III, pp. 170–171. Śāstri also notices (p. 171) a *Lakṣaṇa-tattvam* by Gaṅgeśa, but as he quotes only the benedictory verse, it is impossible to know its nature. One would suppose that it is simply the section on *lakṣaṇa* from *T.C.*, IV.

[16] Ghiyās-ud-dīn Tughluq invaded Tirhut in A.D. 1322, and from that time Tirhut appears to have paid tribute fairly regularly to Delhi. However, the province was left under the direct rule of Hindu kings of the Kāmeśvara dynasty until the middle of the sixteenth century. Cf. Singh, p. 85.

In the fifteenth century, Jayadeva Pakṣadhara [17] was probably the greatest Naiyāyika in Mithilā. Although none of his works is here dealt with, it seems well to give some attention to his date, since Pakṣadhara is connected by tradition with Raghunātha, with whom we shall be concerned in the next subsection, and since Pakṣadhara's date has been often incorrectly stated.[18]

Rajendralal Mitra (Mitra, V, No. 1976), followed by Chakravarti (p. 267), Satischandra (p. 407), and Sen (pp. 12–14), interpreted the colophon of a commentary on the *T.C.* by Pakṣadhara to give a date corresponding to A.D. 1278.[19] So early a date for Pakṣadhara must now be recognized as impossible because of the following two facts:

(*a*) The Bihar and Orissa Research Society possesses a manuscript of the Viṣṇu-purāṇa transcribed by Pakṣadhara in A.D. 1464; [20]

(*b*) Pakṣadhara's pupil Rucidatta transcribed a manuscript in A.D. 1505.[21]

Almost all the traditions concerning Pakṣadhara are reconcilable with these later dates. Thus, in the following verse still current in Tirhut, his name is connected with those of Śaṃkara Miśra and Vācaspati Miśra:

"Śaṃkara Miśra and Vācaspati Miśra are as great [in Nyāya] as Śaṃkar[ācārya] and Vācaspati [were in Vedānta]; yet, an opponent worthy of Pakṣadhara cannot anywhere be found." [22] Both Śaṃkara Miśra and Vācaspti Miśra may be assigned with certainty to the fifteenth century.[23]

[17] For proof that Jayadeva and Pakṣadhara are names of the same man, cf. *Tarkikarakṣā*, Bhūmikā, p. 21, n. 1, and Phaṇibhūṣaṇa, Intro., p. 15.

This logician must be distinguished from the much earlier poet and logician Jayadeva Piyuṣavarṣa, who wrote the *Prasanna-rāghava* and the *Candrâloka*. This is clearly pointed out by Sen, p. 14. An article in *J.B.O.R.S.*, XXIV, 166 ff. still argues for an identification of the two, but offers no proof other than a colophon said to refer to Pakṣadhara as Piyuṣavarṣa. The colophon, however, is misquoted, unless the *I.O.* catalogue is wrong, for according to the catalogue the colophon reads *varya*, not *piyuṣavarṣa* (*Cat. I.O.*, Pt. IV, p. 632).

[18] This is because definite evidence has only recently come to light.

[19] The colophon in question actually reads: "*Śakâbdā La Saṃ* 1509" (Sen, pp. 12–14), which gives A.D. 2614 if it refers to the era of Lakṣmana Sena, or A.D. 1588 if to the Śaka Era. It is only by supposing the figures an error for 159 or another way of writing 159 that one can interpret the date as A.D. 1278.

[20] *J.B.O.R.S.*, XXIV, 164–165.

[21] Gopīnāth, III, 138. Peterson, in his *Sixth Report in Search of Sanskrit mss. in the Bombay Circle*, p. 76, lists a MS. of Rucidatta's *Tattva-cintāmaṇi-prakāśa-pratyakṣa-khaṇḍa* bearing the date Śaka 1292. As Gopīnāth and Singh have pointed out, this must be an error.

[22] *Saṃkara-Vācaspatyoḥ samānau Śaṃkara-Vācaspatī bhavataḥ,*
Pakṣadhara-pratipakṣī lakṣībhūto na ca kvâpi.

Quoted in *Khaṇḍanoddhāra* Bhūmikā, p. 3. For the interpretation, cf. Gopīnāth, III, 151. '*Śaṃkara*' and '*Vācaspati*' in their second occurrence may also refer to Śiva and Bṛhaspati.

[23] For Śaṃkara Miśra, cf. Gopīnāth, III, 143–153. MSS. of his works are extant bearing dates corresponding to A.D. 1462 and 1472. Vācaspati Miśra was a court officer under Kings Bhairavendra and Rāmabhadra; cf. Chakravarti, 270–271; Singh, 110–113, Gopīnāth, III, 152–153.

Tradition also connects Pakṣadhara with the poet and fabulist Vidyāpati, who flourished, according to Grierson, in the first half of the fifteenth century.[24] Tradition would have Vidyāpati a pupil of Hari Miśra, the uncle and teacher of Pakṣadhara.[25] However, there is reason to suppose that Pakṣadhara was considerably younger than Vidyāpati.

A story is told that Pakṣadhara, as a little boy,[26] visited Vidyādhara's house and sat down unnoticed in a corner. This gave Vidyādhara a chance to pun on '*prāghuṇa*' (guest) and '*ghuṇa*' (a small insect, a sort of termite):

> *Prāghuṇo ghuṇavat koṇe*
> *Sūkṣmatvān nôpalakṣyase*
> "[My little] guest (*prāghuṇa*) sitting like a *ghuṇa* in the corner,
> You are too small to be seen."

The child's answer was better than the elder's pun:

> *Na hi sthūladhiyaḥ puṃsaḥ*
> *Sūkṣme dṛṣṭiḥ prajāyate*
> "That's because weighty-minded men
> Have no eyes for little things,"

for the word '*sūkṣme*' means subtle as well as little and the expression '*sthūladhiyaḥ*' instead of weighty-minded could mean thick-headed.[27]

That Pakṣadhara was younger than Vidyāpati, and that he flourished in the last rather than the first half of the fifteenth century may be argued from more solid fact than the preservation of the story quoted above. We know that Pakṣadhara taught Bhagīratha Ṭhakkur up to that scholar's twentieth year.[28] Bhagīratha's younger brother, Maheśa Ṭhakkur, an ancestor of the present King of

[24] Grierson, *Test of a Man*, Intro., p. xii.

[25] Phaṇibhūṣaṇa, Intro., p. 17. That Pakṣadhara studied under Hari Miśra appears from an introductory verse to Pakṣadhara's Āloka:

> *Adhītya Jayadevena Harimiśrāt pitṛvyataḥ*
> *Tattva-cintāmaṇer ittham Āloko 'yam prakāśyate.*

Quoted in *Tarkikarakṣā* Bhūmikā, p. 23.

[26] The story is told in Singh, p. 184 and in Phaṇibhūṣaṇa, Intro., p. 17. It is not specifically stated that Pakṣadhara was a child, but the story would be pointless otherwise.

[27] There may be more than tradition to connect the two men. In the twenty-fourth tale of Vidyāpati's *Puruṣaparīkṣā* (Test of a Man), the magician is given the name of Pakṣadhara, and this may be, as Grierson thinks (Intro., p. xv), a reference to the young Naiyāyika.

[28] "*Viṃsâbde Jayadeva-paṇḍita-kaves tarkâbdi-pāraṃ gataḥ śrīmān eṣa Bhagīrathaḥ . . . ,*" Bhagīratha's *Dravya-kiraṇâvalī-prakāśa-ṭīkā*, as quoted in *Tarkikarakṣā*, Intro., p. 23.

Darbhanga, became Rāja of Mithilā in A.D. 1557 [29] and did not die till 1569.[30] The difference in age between the brothers is not known, but it would be stretching probability to assign a date much earlier than 1500 for Pakṣadhara's death. That Pakṣadhara was still alive about 1500 is all the more likely in view of the traditions associating him with Raghunātha, which we shall examine below.

3. *Raghunātha Śiromaṇi* (c. A.D. 1475–c. 1550)

Raghunātha Śiromaṇi [31] was one of the most original of Indian philosophers. His commentary on the second book of Gaṅgeśa frequently disagrees with the master; his *Padārtha-tattva-nirūpaṇa* is even more revolutionary in attacking dogmas of his school. Because of the original character of his work, and because of the connection of Vāsudeva Sārvabhauma, who was probably his teacher, with the religious leader Chaitanya, a large number of traditions has gathered around his and his teacher's names. Some of these can be shown to be historically worthless, but enough remains that is possible to forbid our sweeping them out indiscriminately. In these traditions, Raghunātha appears as a brilliant but disrespectful pupil in youth, and in his maturity as a great scholar, perhaps overly proud.

The teacher, Vāsudeva Sārvabhauma, was born into one of the greatest Brahmin families in Bengal, the Akhaṇḍala Bannerjees (Bandyopadhyāya).[32] This was a family of Rāṛhī Brahmins,[33] and Professor Phaṇibhūṣaṇa Tarkavāgīśa states that the name of Vāsudeva occurs in the extant genealogical records of the Rāṛhīyā

[29] *Tarkikarakṣā*, Intro., p. 24 gives an inscription found on a well 15 kos from Janakapura, stating that Maheśa obtained Mithilā *"śāke randhra-turaṅgama-śruti-mahī 1478* [sic] *saṃlakṣite hāyane."* However, the words here give 1479 (A.D. 1557), which seems preferable in view of the verse quoted by Singh, p. 213: *"Nav grah ved vasundharā* (i.e., 1479) *śak mai Akbar Śāh | paṇḍit subudh Maheś ko | kinho Mithilā nāh."*

[30] Singh, p. 216.

[31] He calls himself Raghunātha and Tarkika-śiromaṇi. The latter is his usual designation in colophons. Other ways of referring to him are: Śrī-Śiromaṇi-Bhaṭṭācārya (*Cat. Bodl.*, II, No. 1317), Bhaṭṭācārya Śiromaṇi, and Bhaṭṭācāryâtmaja (Chakravarti, p. 275). Bhaṭṭācārya is simply a title of respect. It was given his teacher Vāsudeva Sārvabhauma (cf. *Chaitanya's Life*, p. 58: "The Bhattacharya sat musing thus . . .," *et passim*). It was likewise given his pupil Rāmakṛṣṇa (cf. *Cat. I.O.*, No. 2069 where the colophon calls him Rāmakṛṣṇa Bhaṭṭācārya Cakravarti).

[32] This appears from the following verse quoted by Mitra in his notice of Vāsudeva's *Advaita-makaranḍaṭīkā* (No. 2854):

Śrī-Bandyânvaya-kairavâmṛta-ruco vedānta-vidyāmayād
Bhaṭṭācārya-Viśāradān Naraharer yam prāpa Bhāgīrathī.

I have followed D. C. Bhattacaryya's emendation of *'ye'* to *'yam'* (referring to the author); see Bhattacaryya *Vās*, p. 59.

[33] For some account of this important caste, see *The History of Bengal*, in course of publication by the University of Dacca, vol. I, pp. 580–582. See also *I.H.Q.*, VII, pp. 719–720.

caste.[34] The problem of tracing Vāsudeva's descent is complicated by the fact that many families claim him as an ancestor, apparently without proof.[35]

In contrast to Vāsudeva's popularity in genealogical records, nothing at all certain is known of Raghunātha's family. The most credible of the traditions is that he was born of a poor family of Nadīyā,[36] that his father died when he was still an infant, and that the widow was reduced to doing housework in order to keep herself and her child alive. Fortunately for Raghunātha, the family where she took work was Vāsudeva's. Another report, that Raghunātha was a Rāṛhī Brahmin born in Koṭa Mānkar, Burdwan District,[37] is less probable in view of the silence of Rāṛhī records. The statement, often repeated, that Raghunātha came from Sylhet in Assam, deserves no credence whatever.[38]

That Raghunātha was the pupil of Vāsudeva rests primarily on tradition, but there are several facts that lend the statement support. Of the traditions, the first to be recorded, so far as I know, is one stating that Vāsudeva had four famous pupils: Raghunātha, Chaitanya, Raghunanda the ritualist, and Kṛṣṇānanda the Tantric. This was recorded by Colebrooke [39] as long ago as 1810, and has been frequently repeated. Phaṇibhūṣaṇa finds fault with it, since Chaitanya's teachers according to old Vaiṣṇava texts were Śrī Viṣṇu-paṇḍita and others, and since he believes that Raghunandana must be younger than Raghunātha. The objections do not seem to me so serious. Granted that Vāsudeva was not Chaitanya's guru, we do have the story of Vāsudeva's lecturing the Prophet of Love for eight days straight on the meaning of the Upanishads.[40] That is, he taught

[34] Phaṇibhūṣaṇa, Intro., p. 10.

[35] Bhattacaryya, *Vās*, p. 58, n. 3.

[36] *Navadvīpa-mahimā*, p. 41; *Nadīyā-kāhinī*, p. 112.

[37] Phaṇibhūṣaṇa, Intro., p. 12, quoting Kālī Prasanna Bannerjee's *Madhya-yuger Bāngālā*.

[38] Since neither the origin of this theory nor its fault has been discussed in English, a brief account here may prove useful. I summarize the following from Professor Phaṇibhūṣaṇa's Introduction to his *Nyāya-paricaya*:

"In 1904, a Bengali scholar, Acyutacaraṇa Chaudhuri, published a paper in the *Sāhitya Pariṣat*, giving an account of a certain Raghunātha according to family chronicles of Sylhet (the *Vaidika-saṃvādinī*). This Raghunātha was the younger son of a Govinda Cakravarti. The elder son, Raghupati, had married Ratnāvatī, the lame daughter of the local king, Suvida Narāyaṇa by name. As a result of this marriage, Raghupati's family was outcasted. Life became so unpleasant for the family in Sylhet, that after Govinda's death, the widow emigrated with her young son Raghunātha to Nadīyā.

"Acyutacaraṇa Chaudhuri identified the Raghunātha of this story with Raghunātha Śiromaṇi.

"In 1913, Upendracandra Datt in *Pratibhā* showed that King Suvida Narāyaṇa could not have been contemporaneous with Raghunātha Śiromaṇi."

Unfortunately, the Sylhet theory is once more repeated in Gopīnāth's recent and generally excellent bibliography (V, 131).

[39] *Two Treatises on the Hindu Law of Inheritance*, Intro., p. xii.

[40] *Life of Chaitanya*, pp. 64–65.

Chaitanya, even though the session ended in his being converted to the views of the younger man. Again, granted that Raghunandana quotes Raghunātha,[41] this does not render impossible his having studied under the same teacher.

That Raghunātha was Vāsudeva's pupil is also recorded by Kānticandra Rāṛhī,[42] who 50 years ago gathered the oral traditions of the pandits of Nadīyā and published them in his *Navadvīpa-mahimā*.

The problem has been approached recently in a new way by D. C. Bhattacharyya.[43] This scholar has examined the fragments of Vāsudeva's commentary on the *T.C.*, comparing the opinions expressed in this commentary with those in Raghunātha's commentary on the same work. He has shown clearly that in at least two passages Raghunātha refers to the work of Vāsudeva, as the super-commentators on the former had already stated. It is significant that in one of these passages Raghunātha disagrees with Vāsudeva's views, which he introduces with the impersonal "*kecit tu* — some people say."

Thus, Bhattacharyya has shown that Raghunātha cannot be older than Vāsudeva. He cannot have been much more than a generation junior;[44] and it seems certain that both men lived in the same city. These facts taken together give considerable support to the tradition.

It is remarkable that Raghunātha himself never mentions the name of any teacher. Such silence is almost unique among Indian philosophers of his time. One is tempted to ascribe it to his pride. Raghunātha begins his work regularly with the same verse, a stanza in praise of the universal soul. This is a practice more natural to a Vedāntī than to a Naiyāyika.[45] This stanza is sometimes followed by verses in praise of himself and his work, such as the following from a Berlin manuscript of the *Anumāna-dīdhiti*:

"The illustrious Tarkika-Śiromaṇi, by study and creative thought having extracted the essence of all books, produces the *Dīdhiti* commentary on the *Cintāmaṇi*. May this work of the poet Raghunātha furnish joy to scholars, since

[41] *Phaṇibhūṣaṇa*, Intro., p. 21.

[42] *Navadvīpa-M.*, pp. 41 ff. With few exceptions his account is followed by Kumuda-nāth Mallik in his *Nadīyā-kāhinī*, pp. 112 ff.

[43] Bhattacharyya, *Vās.*

[44] Vāsudeva Sārvabhauma was still living in 1510, the year of his famous conversion to Chaitanya's teaching, and probably lived for some time after that, since he is credited with writing many Vaiṣṇava hymns after his conversion. On the other hand, as will be shown, Raghunātha's death seems to have occurred somewhere about 1550.

[45] This verse may be considered further evidence that Raghunātha was Vāsudeva's pupil. Vāsudeva not only lectured Chaitanya on the meaning of the Upanishads, but was also the author of the *Advaita-makaranda-ṭīkā* (Mitra No. 2854). So far as I know, Vāsudeva and Raghunātha are the only Naiyāyikas of their period to have written on Vedānta. Unfortunately, neither the *Advaita-makaranda-ṭīkā* nor Raghunātha's commentary on the *Khaṇḍana-khaṇḍa-khādya* has yet been published.

it refutes the opinions of others, is of exquisite intellectual taste, and all faults have been avoided by the clear thought [of the author]."[46]

More famous is the self-commendatory verse punning on the word Raghunātha, found at the end of the *Anumāna-dīdhiti*:

> "What wise men of the past with one accord
> Agreed was false and what agreed was true,
> When I, whose lord is Raghu, I the lord
> Of logic speak, must all be judged anew."[47]

Apparently the works of Vāsudeva were inferior to those of Raghunātha, who may have expressed his low opinion of them by refusing the customary homage to his teacher.

Vāsudeva, who was head of a ṭol in Navadvīpa,[48] is said to have accepted Raghunātha as a pupil at a very early age, being much impressed by his natural parts. Many stories are told of the boy's precocity. When beginning the alphabet, he insisted on knowing why *ka* should come before *kha,* why there should be two *ja*'s (*ya* and *ja*) and three *sa*'s (*sa, ṣa,* and *śa,* all pronounced alike in Bengal). By the time Vāsudeva finished explaining the alphabet, he had been forced to explain the whole of phonetics and grammar.[49] Perhaps the admiration the child

[46] *Cat. Berlin,* p. 197 (ms No. 650):
adhyāyana-bhāvanābhyāṃ sāraṃ nirṇīya nikhila-tantrāṇāṃ
Dīdhitim adhi Cintāmaṇi tanute Tarkika-Śiromaṇiḥ śrīmān
para-juṣṭa-nayān nivartamānā mananâsvādya-rasā viśuddha-bodhaiḥ
Raghunātha-kaver apeta-doṣā kṛtir eṣā viduṣām tanotu modam.

[47] *R. Jāg.* Īśvarânumāna, p. 28:
viduṣām nivahair ihâikamatyād
yad aduṣṭaṃ niraṭaṅki yac ca duṣṭam,
mayi jalpati kalpanâdhināthe
Raghunāthe, manutām tad anyathâiva.

[48] The *Navadvīpa-M.*, p. 35, tells an amusing story of how Vāsudeva established his ṭol. He had studied in Mithilā, where the Naiyāyikas, in an effort to preserve the hegemony in their field, forbade the copying of Nyāya MSS. for export. Vāsudeva, however, memorized the whole of the *Tattva-cintāmaṇi* and began memorizing Udayana's *Kusumâñjali.* But before he had started on the prose portion, his plan was discovered and he was hastily graduated and dismissed. With the stock of texts he had memorized he was able to open the first ṭol of Nyāya in Bengal.

Unfortunately, the same story is told of Haridāsa Nyāyālaṅkāra (Gopīnāth, V, 129). Furthermore, an examination of Vāsudeva's works has led D. C. Bhattacharyya to the conclusion that Vāsudeva cannot have been the first of the Navya-naiyāyikas in Bengal (Bhattacharyya, *Vās,* p. 64).

[49] *Navadvīpa-M.*, p. 43.

gained by his scholastic ability compensated for his poverty and for his physical deformity, for Raghunātha was blind in one eye.[50]

Raghunātha's method of study, according to the *Navadvīpa-mahimā*, was to copy out the text to be discussed on the morrow, jot down refutations of any logical weaknesses he might notice, and be prepared to give his own opinion on the subjects covered by the text. An excellent method of study! But it was hard on Vāsudeva when the pupil began refuting weak points in the teacher's own book, the *Sārvabhauma-nirukta*. Perhaps it was this that persuaded Vāsudeva to let his precocious pupil go to Mithilā to complete his logical training at the feet of the aged master Pakṣadhara.[51]

The story goes[52] that Raghunātha's reception in Mithilā by Pakṣadhara was far from cordial. Pakṣadhara is said to have made the following extemporaneous verse:

> Indra has a thousand eyes,
> Men two, and Śiva three;
> But here's a lad with only one.
> Who on earth is he?[53]

to which Raghunātha straightaway replied:

> "He who makes the blind to see
> And scholars knowledge reach,
> Only he can teacher be
> Though others say they teach."[54]

Despite this unfavorable reception, Raghunātha's thirst for knowledge held him in Mithilā, where he attended Pakṣadhara's ṭol. But his lack of reverence soon

[50] For contemporary evidence of this, cf. Satischandra, p. 464, n. 2.

Kumuda-nāth Mallik notices an odd tradition concerning Raghunātha's blindness that may interest students of folklore and superstition. Some say, he informs us, that Raghunātha was not one-eyed from birth, but that one night, the seventh night of the lunar month (it is on this night that the Durgā-pūjā begins), he was pondering over his logic, staring vacantly at the sky, when an insect flew into one eye and blinded it. It is because of this divine punishment of Raghunātha that Naiyāyikas must never study on the night of the seventh (*Nadīyā-kāhinī*, p. 113).

[51] *Navadvīpa-M.*, p. 46.

[52] The following, except where noted, is the story given in *Navadvīpa-M.*, pp. 47–50.

[53] *Ākhaṇḍalaḥ sahasrâkṣaḥ, virūpâkṣas trilocanaḥ,*
anye dvilocanāḥ sarve, ko bhavān ekalocanaḥ?

[54] *Yo 'ndham karoty akṣimantaṃ, yaś ca bālam prabodhayet,*
tam evâdhyāpakam manye, tad-anye nāma-dhāriṇaḥ.

Quoted by Badrināth Śāstri in his edition of Raghunātha's *Kiraṇâvalī-prakāśa-dīdhiti*, Princess of Wales Saraswati Bhavana Texts, No. 38, Intro., p. 6. The *Navadvīpa-M.* makes Raghunātha give a different answer (p. 47) and saves this verse for a later duel.

brought him into trouble. One day he took Pakṣadhara up on the subject of the commentary Pakṣadhara was writing on the *Sāmānya-lakṣaṇā*.[55] Raghunātha apparently disapproved of Pakṣadhara's whole theory of *sāmānya-lakṣaṇā*. Pakṣadhara called the young man a one-eyed infant (*vakṣoja-pāna-kṛt kāṇa*) and dismissed him from class. Some days later, before a larger audience, for the prospect of a fight always draws spectators, the argument flared up again. It is said that this time Pakṣadhara realized he was in the wrong but was ashamed to admit it before so many pupils and teachers. He again insulted Raghunātha, calling him a stupid rogue (*nirbbodh vyālik*), and the audience accompanied Raghunātha's exit with jeers and laughter.

The tradition continues that Raghunātha determined that night to go to Pakṣadhara and either force an admission of defeat from his teacher or kill him.[56] Accordingly, he went to his teacher's house, sword in hand. Fortunately he overheard the old man, who was gazing at the full moon in a cloudless sky, remark to his wife that an even brighter moon had risen in the shape of his new pupil Raghunātha. The would-be murderer ran from his hiding place and fell at the feet of his teacher.

The next day, before the assembled pandits and students of Mithilā, Pakṣadhara acknowledged his defeat, and Raghunātha won the much envied right of granting titles in Nyāya, which had hitherto been the prerogative of the Mithilā schools.

I cannot say how much truth there may be in these stories of Raghunātha and Pakṣadhara. The *Śabda-kalpadruma* records an independent tradition that Raghunātha studied under Pakṣadhara, but the context renders this almost wholly useless.[57] Chronologically, at least, the stories are possible, for Vāsudeva

[55] The *Sāmānya-lakṣaṇā* forms a chapter of Book II of Gaṅgeśa's *T.C.* Pakṣadhara's *Āloka* is a commentary on the whole of the *T.C.* '*Sāmānya-lakṣaṇā-pratyāsatti*' is the indirect connection of the sense organ with generic characters through its direct connection with particular loci of these generic characters. It is through this connection alone that we can rise above a knowledge of particulars. Raghunātha, while not discarding the theory entirely as do the Vedantis and others, objects to the term 'connection'. Cf. *N.K.*, *s. v.* Sāmānya-lakṣaṇaḥ.

[56] For this part of the story, Satischandra (p. 464, n. 2) refers to an article in Mookerjee's Magazine for 1872. I have been unable to obtain this. The following account is that of *Navadvīpa-M.*, pp. 50–52. The story has been often told, e.g., Satischandra, pp. 463–464; *Gādā.*, Bhūmikā, p. 6.

[57] *Śabdakalpadruma*, *s.v.* Nyāya, p. 1791, lists the succession of Navya-naiyāyikas as follows: Gaṅgeśa — son Vardhamāna — pupil Maṇimiśra Yajñapati Upādhyāya — pupil Pakṣadhara Miśra (= Jayadeva Pakṣadhara) — pupil Raghunātha — pupil Mathurānātha — pupil Bhavānanda — pupils Jagadīśa and Gadādhara. More than half the links in this chain are indubitably wrong.

Śāstri (XI, p. 12, and New Series, I, p. xviii) gives another tradition to the effect that Raghunātha was persuaded to leave Vāsudeva and go to Mithilā by a fellow pupil, Kaṇāda, who had just returned from there. But this is impossible; Kaṇāda was a pupil of Janakīnātha Cūḍāmaṇi; cf. Phaṇibhūṣaṇa, Intro., p. 29.

left Nadīyā some time between 1497 and 1510,[58] probably about the turn of the century, and went to live in Purī where he obtained great influence with King Pratāparudra of Orissa (reg. 1497–c. 1541 [59]). Therefore Raghunātha must have finished his studies with Vāsudeva before 1510, probably several years before then.[60] It has been shown that Jayadeva Pakṣadhara was alive between 1440 and 1464 and that he probably lived to the end of the century. If Raghunātha's journey to Mithilā took place, say, between 1490 and 1500, it is quite possible that he may have studied under the old logician.

A story recorded by both the *Navadvīpa-M.* and the *Nadīyā-Kāhinī* states that Raghunātha on his return to Navadvīpa was at first prevented by poverty from starting a school, but that he was soon enabled to do so through the generosity of a rich Gopa named Hari Ghoṣ. This story bears all the marks of an etiological myth,[61] but we may well believe the information that follows, that pupils from all parts of India soon flocked to Raghunātha's school in Navadvīpa. This is attested by the enormous amount of exegesis produced in the following century on Raghunātha's writings.

It was long ago claimed by Fitzedward Hall [62] that the logician Rāmabhadra Sārvabhauma was the son of Raghunātha. But this is certainly wrong,[63] and so

[58] 1497 is the date of Pratāparudra's accession; 1510 is the traditional date of Chaitanya's meeting with Vāsudeva at Purī. The story of this meeting is given in the *Caitanya-carit-amṛta* (*Chaitanya's Life*, Chap. 4), which was composed in A.D. 1615 (or possibly in A.D. 1581); cf. *I.H.Q.*, IX, p. 99. According to Vaiṣṇava tradition, Vāsudeva's departure was caused by Husain Shah's (reg. 1493–1518) persecution of the Hindus in Nadīyā; see D. C. Sen, *Chaitanya and his Companions*, pp. 81–82. Vāsudeva may have resided in Purī for some time before meeting Chaitanya there, since there is no mention of their having previously met in Nadīyā although it is stated that Vāsudeva was well acquainted with Chaitanya's family.

[59] Cf. R. D. Bannerjee, *History of Orissa*, vol. I, pp. 323, 334. Cf. also *Ind. Ant.*, 58, pp. 63 ff.

[60] According to the *Navadvīpa-M.*, Vāsudeva was still in Navadvīpa when Raghunātha returned from Mithilā.

[61] In Bengali '*Hari Ghoṣer goyāl*' (Hari Ghoṣ's barn) is a common idiom that has no exact English equivalent. It means a place where there is a great hubbub of people all talking at the same time and enjoying themselves. The *Nadīyā-kāhinī* derives the idiom from the fact that Raghunātha's school was first established in one of Hari Ghoṣ's barns.

[62] Hall's *Index*, p. 67 and p. 227, *s. v.* Tárkikachúḍámaṇi.

[63] That it is wrong is shown by Rāmabhadra's commentary on the *P.T.N.*, where in regard to a law of negation (p. 109, in *The Pandit*, 1912) he gives his father (*tātacaraṇās*) as authority for disagreeing with the opinion of the author (Raghunātha).

Phaṇibhūṣaṇa, Intro., p. 28 quotes the phrase '*śabda-maṇi-dīdhitau tātacaraṇāḥ*' from the printed text of Rāmabhadra's commentary on the *P.T.N.*, but goes on to state that in an old MS. of the work preserved at Navadvīpa the corresponding reading is '*śabda-maṇi-marīcau tātacaraṇāḥ*'.

We shall meet Rāmabhadra below as the teacher of Mathura's father.

far as I know there is no evidence to disprove the tradition recorded by the *Navadvīpa-M.* (p. 60) that Raghunātha never married. The tradition adds that he would say to those who questioned him about it, "One marries to get sons and daughters. The *Vyutpatti-vāda* is my son and the *Līlāvatī* my daughter. Thus, without marriage I have received the fruits of marriage."

From the huge literature of commentaries on the *Dīdhiti* in the sixteenth and seventeenth centuries, one may infer that Raghunātha had numerous pupils, but for the most part their names are not preserved. One exception is Rāmakṛṣṇa Bhaṭṭācārya Cakravarti, the author of the *Guṇa-śiromaṇi-prakāśa*, a commentary on his teacher's *Guṇa-kiraṇâvalī-prakāśa-dīdhiti.* In the introductory verse to this commentary, Rāmakṛṣṇa clearly states that his teacher was Śiromaṇi.[64] Rāmakṛṣṇa wrote commentaries on several other of his teacher's works, on the *Līlāvatī-prakāśa-dīdhiti,*[65] the *Ākhyāta-vāda,*[66] the *Nañ-vāda,*[66] and the *Tattva--cintāmaṇi-dīdhiti.*[67]

In his time, Rāmakṛṣṇa was regarded as one of the leading Naiyāyikas of India. Abū 'l Faẓl's *Āīn-i-Akbarī* contains lists of the learned men of Akbar's time.[68] These learned men are divided into five categories, of which the fourth comprises names of men "who look upon testimony as something filled with the dust of suspicion and handle nothing without proof."[69] Actually, the Hindu members of the fourth category, twice as numerous as the Muslims, are all Naiyāyikas. Rāmakṛṣṇa[70] is one of the 15 Hindus listed. D. C. Bhattacharyya, to whose article I am indebted for the above information, states that the learned men mentioned in these lists "mostly flourished early in the reign of Akbar." Accordingly, we may suppose that Rāmakṛṣṇa was famous in the 1560's and

[64] *"— tasyâśayaṃ guṇa-vivecanam ākalayya*
brūte Śiromaṇi-guror iha Rāmakṛṣṇa."
Cat. I.O., No. 2068, quoted by Chakravarti, p. 277.

[65] *Cat. Tanjore,* No. 6186, No. 6187.

[66] *Cat. Tanjore,* No. 6599.

[67] *Cat. Cat.*, Pt. III. Gopīnāth (V, 159) attributes two other works to this Rāmakṛṣṇa, but I think incorrectly. The *Nyāya-dīpikā* can scarcely be by this same Rāmakṛṣṇa, since the author of that work states his teacher to have been a Satānanda (Śāstri, Second Series, II, No. 117). I have been unable to find any mention other than by Gopīnāth of a *Tarkâmṛta* by Rāmakṛṣṇa, but Gopīnāth's own remarks make the ascription of the work doubtful. He speaks of a commentary on this *Tarkâmṛta* by the author's great-grandson Kṛṣṇakānta Vidyā-vāgīśa. Now this Kṛṇṣakānta composed a commentary on the *Śabda-śakti-prakāśikā* in A.D. 1802 (*Cat. I.O.*, No. 2034). Since there is a MS. of one of our Rāmakṛṣṇa's works copied in A.D. 1603 (*Cat. I.O.*, No. 2069), and since, as we shall see, he was famous long before this, he cannot have had a great-grandson writing books in the nineteenth century.

[68] Many of the Hindu scholars of these lists have been identified by D. C. Bhattacharyya in his article "Sanskrit Scholars of Akbar's Time," *I.H.Q.*, XIII (1937), pp. 31–36.

[69] Blochmann's translation, second ed., p. 606, quoted by Bhattacharyya.

[70] Given by Blochmann as Rām Kishn.

1570's. This supposition fits nicely with what we know of the dates of Raghunātha.

Besides Rāmakṛṣṇa it is possible that Bhavānanda Siddhāntavāgīśa was Raghunātha's pupil. This is Gopīnāth's opinion (V, 137–8), but the evidence is not strong. It is certain that Viśvanātha Pañcānana was not Raghunātha's pupil.[71]

The oldest dated manuscript I can find listed of a commentary on Raghunātha's works was copied in A.D. 1593.[72] But Raghunātha must have died long before this time. Jagadīśa was old enough to have pupils in 1610 (see next subsection); Jagadīśa's teacher, Rāmabhadra Sārvabhauma had already commented on Raghunātha, and his comment cannot have been written until after Raghunātha's death. Again, the absence of Raghunātha's name in the *Āīn-i-Akbarī* taken together with the presence of his pupil's name seems to imply that Raghunātha had died before the reign of Akbar. If we assign his death to A.D. 1550 we shall probably not be more than 20 years wrong.

Raghunātha's works, at least those that have been printed, are very brief; all of them could be contained in a single volume. Yet such is the formidable conciseness of his style that to understand its full meaning and implication one requires a commentary ten times the length of the text. None of his works has yet been translated into a European language, nor do I know of any modern study of his philosophy.

Raghunātha's great work is the *Dīdhiti* or comment on Gaṅgeśa's *T.C.* It has often been stated that this commentary extends to the first two books only of the *T.C.*,[73] but it seems to me certain that the *Dīdhiti* originally covered the whole work. Manuscripts of the *Dīdhiti* on the last two books are listed. Even ruling out the manuscripts of the *Dīdhiti* on *T.C.* III and IV listed in the notorious catalogues of Oppert, there remains a *Śabda-khaṇḍa-śiromaṇi* listed in *Cat. Benares* (p. 178). One of the Leipzig manuscripts of the *Anumāna-dīdhiti* had a marginal note referring to the *Śabda-maṇi-dīdhiti*.[74] Furthermore, the following small works of Raghunātha listed in the *Cat. Cat.* appear to be fragments of a commentary on *T.C.* IV: *Ākāṅkṣā-vāda*, *Vākya-Vāda*, *Śabda-vādârtha*. To these one may add the *Yogyatā-rahasya* and the *Apūrvavāda-rahasya* if these are really by Raghunātha and not by Mathura.

The following list indicates briefly the titles and nature of those works of

[71] Śāstri suggested that he was (*J.A.S.B.* (1910), p. 313), but Viśvanātha wrote his *Nyāya--sūtra-vṛtti* in A.D. 1634 (Śāstri, *ibid.*), which makes the theory impossible.

[72] It is a MS. of Bhavānanda's *Tattva-cintāmaṇi-dīdhiti-ṭippaṇī*; cf. *I.H.Q.*, II, 868 and XVII, 243.

[73] Hall (p. 31) was the first to state this. He has been generally followed by European scholars; e.g., Aufrecht, *Cat. Cat.*, p. 485; Keith, p. 35.

[74] *Cat. Leipzig*, p. 293, No. 943. The reference is: "*svarga-kāmo yajetêty-ādāv anvaya-bodhaṃ Śabda-maṇi-dīdhitau vivecayiṣyāmaḥ.*"

Raghunātha that are known to me. Where no details follow the indication 'published', at least one edition will be found listed in Emeneau. Where no manuscript reference is given, reference will be found in the *Cat. Cat.*[75]

1. *Tattva-cintāmaṇi-dīdhiti*. A commentary on Gaṅgeśa's *T.C.* A large number of the titles of MSS. listed in *Cat. Cat.* under Raghunātha are of portions of this work. Books I, II, and at least fragments of Book IV are still extant, see above. Book II published in many editions.

2. *Ākhyāta-vāda*. A work on the meaning of verbal suffixes. It is a new treatment of the matter discussed in the Ākhyāta-vāda chapter of *T.C.*, IV. Published with Mathura's *Vivṛti* and Rāmacandra Nyāyavāgīśa's *Ṭippanī* in B.I. ed. of *T.C.*, vol. IV, Part II, pp. 867–1009.

3. *Nañ-vāda*, called also *Nañ-artha-vivṛti* (*Cat. I.O.*, No. 2049), *Nañ-vyutpatti* (*Cat. Adyar Lib.*, p. 182), and *Nañ-viveka* (Bhand. 1880, No. 116). A discussion of the meanings of negation. This subject was not treated by Gaṅgeśa. Published with Gadādhara's *Nañ-vāda-ṭīkā* in B.I. ed. of *T.C.*, vol. IV, Part II, pp. 1010–1086.

4. *Padārtha-tattva-nirūpaṇa*, referred to by commentators as the *Padārtha-khaṇḍana*. An examination of the categories. A logical basis for most of the traditional distinctions of categories is shown to be impossible; several new categories are suggested instead. The main points of Raghunātha's criticism are noted briefly below (Sect. II, § 13). Published. The *Padārtha-khaṇḍana-ṭippanī* in Paris said to be by Raghunātha himself (*Cat. Bibl. Nat.*, No. 860) is possibly wrongly attributed, for there is no other case known of Raghunātha's commenting on his own work.

5. *Ātma-tattva-viveka-dīdhiti*, also called *Ātma-tattva-viveka-vivṛti* (*Cat. Bomb. Br.*, No. 1013), and *Bauddha-dhikkāra-dīdhiti* (*Cat. I.O.*, No. 5891; Mitra, No. 1327). A commentary on Udayana's famous refutation of the Buddhists. Published but not yet complete.

6. *Kiraṇâvalī-prakāśa-dīdhiti*. A commentary on Vardhamāna's commentary on Udayana's summary of Vaiśeṣika views of substance and quality. Udayana's summary is in effect a commentary on part of Praśastapāda's *Bhāṣya*. Raghunātha here expresses many, if not all, of the opinions expressed in his *Padārtha-tattva-nirūpaṇa*, but gives them here in more detail. Of Raghunātha's work, the first part, on substance, has not been published, but appears to exist in MS.; cf. *Cat. Bik.*, which lists as No. 1166 a *Dravya-kiraṇâvalī-parīkṣā* by Rudra Nyāyavācaspati, which is said to be a supercommentary on Raghunātha's *Dravya-*

[75] There may well be other unpublished works of Raghunātha, particularly in the Benares Government Collection and in the collection of the Asiatic Society of Bengal. There exists no descriptive catalogue of the former collection, while the section of the descriptive catalogue of the latter dealing with Nyāya has not yet been published, or at least has not yet reached America.

-kiraṇâvalī-prakāśa-vivṛti. Part two of Raghunātha's work, on quality, published in the Princess of Wales Saraswati Bhavana Sk. Series, No. 38. Some useful discussions of Raghunātha's views in this work will be found in MM. Kālīpada Tarkāchārya's Bengali *Bhāṣya-tātparyya* on Praśastapāda's *Bhāṣya.*

7. *Dīdhiti.* A commentary on Śri Harṣa's *Khaṇḍana-khaṇḍa-khādya.* Still in MS. The 'extracts' from this published in the Chowkhambā Sk. Series complete edition of the *Kh-kh-kh.* are so few as scarcely to justify Raghunātha's name on the title page. The commentary '*Khaṇḍana-bhūṣā-maṇi*' on the *Kh-kh-kh.* by Śrī Raghunātha Bhaṭṭācārya, which the Chowkhambā Sk. Series has begun publishing (first fascicule, 1936) is not by our Raghunātha, as shown by the diffuse character of the work.

8. *Nyāya-līlāvatī-prakāśa-dīdhiti* or *-vistārikā.* A commentary on Vardhamāna's *Līlāvatī-prakāśa,* which in turn is a commentary on Vallabha's Vaiśeṣika work, the *Nyāya-līlāvatī.*

9. *Nyāya-līlāvatī-vibhūti.* Cf. Hall, p. 73. This appears to be a different work from No. 8 and to comment only on the *mūla* or text of Vallabha.

10. A commentary on Udayana's *Nyāya-kusumâñjali.*[76]

11. *Malimluca-viveka.* A work on intercalary months, first mentioned by Kānticandra Rāṛhī (*Navadvīpa-M.,* p. 59). A MS. of this has been seen by Professor Phaṇibhūṣaṇa. Since the initial verse of this work is identical with that of the *T.C. Dīdhiti,* there appears to be no doubt that it is by Raghunātha. Cf. Phaṇibhūṣaṇa, Intro., p. 21, where it is also stated that this work is quoted by Raghunandana in his *Malamāsa-tattva.*

Besides the above, there are two works listed under Raghunātha's name in the *Cat. Cat.,* concerning which I can state little more than may be inferred from the titles:

Advaitêśvara-vāda.

Niyojyânvaya-nirūpaṇa. This is said by Hall, p. 193, to be on Mīmāṃsā.

Satischandra, p. 465, mentions as another work of Raghunātha an *Avacchedakatva-nirukti,* "an original treatise." Without further evidence this may be doubted. 'Avacchedakatva-nirukti' is the name of a section of the *T.C. Didhiti, R. Jāg.* 257. Bühler's *Nirodha-lakṣaṇa* listed in *Cat. Cat.* is probably an error for *Virodha-lakṣaṇa.* The 'Virodha-lakṣaṇa' or 'Viruddha-lakṣaṇa' is also part of the *T.C. Didhiti, R. Jāg.* II, 1123.

Tradition speaks of Raghunātha as having been skilled in poetry also. There may be some basis to this since he speaks of himself as the "poet Raghunātha".[77] The *Navadvīpa-mahimā* ascribes to him four verses in which he boasts of his ability in this respect. The second of these claims that one who knows the *Cintā-*

[76] The only listing of this work that I can quote is that noticed by Aufrecht, viz. *Cat. Benares,* p. 160.

[77] *Cat. Berlin,* p. 197, quoted above.

maṇi comes naturally by poetic ability, just as Śiva may safely play with snakes since he has drunk up the ocean of poison.[78] If Raghunātha did write verses there seems to be no MS. of them preserved.

4. *Mathurānātha Tarkavāgīśa* (c. A.D. 1600–c. 1675)

Mathurānātha was one of the most prolific of Navya-nyāya authors. The bulk of his writings must be at least twenty times that of Raghunātha's. But unlike the older author, tradition has little to say of Mathura; what it does say is either suspect or definitely false. This is not surprising. Mathura was a painstaking, one might almost say a plodding scholar, not the sort of man to make any great impression on his contemporaries.

Although tradition fails us, one can establish the date of Mathura within fairly close limits.

We know that Mathura was the son of Rāma Tarkālaṅkāra; he tells us so himself in a verse prefixed to each book of his commentary on the *T.C.*:

"Bowing in reverence before my father, Śrī Rāma Tarkālaṅkāra, who built a bridge across the sea of Nyāya, who is the source of all my success, and who is famed in the three worlds . . ."[79]

What is more, Rāma may well have been not only Mathura's father but his teacher. This was pointed out by Chakravarti on the basis of the following verse:

"Bowing his head to the feet of Śrī Rāma, the world's teacher, his son Mathurānātha elucidates the *Dīdhiti*."[80]

To judge from the above, Rāma was a Naiyāyika of some importance. Rāma's father also appears to have been a Naiyāyika.[81] Mathura, then, belonged to one of those families of logicians that are a phenomenon of this period in Bengal.

The only preserved work of Mathura's father, so far as I know, is his commentary on Raghunātha's *Ātma-tattva-viveka-dīdhiti*, now being published in the

[78] *Kavitvaṃ kīyad-aunnatyaṃ Cintāmaṇi-maṇīṣiṇaḥ,*
nipīta-kāla-kūṭasya Harasyêvâhi-khelanam.
(*Navadvīpa-M.*, p. 52.)

[79] *Nyāyâmbudhi-kṛta-setuṃ hetuṃ Śrī Rāmam akhila-sampatteḥ*
tātaṃ tribhuvana-gītaṃ Tarkālaṅkāram ādarān natvā.

The verse has a further connotation, since Rāma, the god, also built a bridge across the sea, is a source of success, and is famed in the three worlds. For the possibility of still other *śleṣas* in the verse, cf. Gopināth, V, p. 136.

[80] *Jagad-guroḥ Śrī Rāmasya caraṇau mūrdhni dhārayan*
tat-suto Mathurānātho Dīdhitiṃ sphuṭayaty amūm.

Introductory verse to *Anumāna-dīdhiti-rahasya*. Chakravarti quotes from Mitra, III, No. 1673, where the verse is fragmentary. The full verse is given in *Cat. Burnell*, p. 116.

[81] According to Phaṇibhūṣaṇa, Intro., p. 25, Mathura quotes his grandfather '*ity asmat-pitāmaha-caraṇāḥ*' in the course of commenting on the *Kiraṇâvalī*.

Chowkhambā Sk. Series multicommentary edition of the *Ātma-tattva-viveka* (work No. 63, 1925–). The introductory verse to this commentary runs as follows:

"Bowing in reverence before the two feet of the glorious Cowherd, and holding in his heart all Sārvabhauma's words of truth, Śrī Rāma, for the enjoyment of intelligent [readers], illuminates with care the commentary on the *Ātma-tattva--viveka* by the author of the *Dīdhiti*." [82]

Rāma's verse states that he was a pupil of Sārvabhauma.[83] This Sārvabhauma, I think, cannot be any other than Rāmabhadra Sārvabhauma,[84] the author of a commentary on the *P.T.N.* called the *Padārtha-khaṇḍana-ṭippanī* and of a commentary on Janakīnātha's *Nyāya-siddhānta-mañjarī* called the *Siddhānta-sāra*.[85]

This Rāmabhadra Sārvabhauma [86] was certainly the teacher of Jagadīśa,[87] who likewise refers to him simply as 'Sārvabhauma',[88] and probably of Jayarāma

[82] *Śrī-govinda-pada-dvandvam praṇamya paramâdarāt,*
hṛdi kṛtvā ca nikhilaṃ Sārvabhaumasya sad-vacaḥ,
Ātma-tattva-vivekasya vyākhyāṃ Dīdhiti-kṛt-kṛtām
prakāśayati yatnena Śrī Rāmaḥ sudhiyām mude.

Rāma here shows himself to be a Vaiṣṇava in more than his personal name. This is of interest, since we shall see that Mathura also invokes Kṛṣṇa.

[83] This alone should be enough to disprove the tradition recorded by Mitra (I, No. 494), Kānticandra Rāṛhī (*Navadvīpa-M.*, p. 62), and Aufrecht that Rāma was Raghunātha's pupil.

[84] It cannot be Vāsudeva Sārvabhauma, as Gopīnāth (V, 135) and others have supposed. Phaṇibhūṣaṇa points out (Intro., p. 25) that in commenting on Raghunātha's *Ātma-tattva--viveka-dīdhiti* Rāma gives the interpretations of several scholars including that of his own teacher (*'guru-caraṇās tu'*, p. 24, line 3). It is quite impossible to imagine Vāsudeva Sārvabhauma competing with others in offering interpretations of a text composed by Raghunātha, who was certainly his junior and most probably his pupil.

[85] The commentary on the *P.T.N.* is printed in *The Pandit*; the *Siddhānta-sāra* is still in MS. (*Cat. Tanjore*, No. 6585). There can be no doubt that the Rāmabhadra of the one work is the Rāmabhadra of the other, for the words "*Śrī-Rāmabhadra-sukṛtī kṛtinām hitāya*" form the third line of an introductory verse to both commentaries.

[86] The most extraordinary confusion has prevailed as to the identity of Rāmabhadra Sārvabhauma. Hall (see above p. 15) thought him the son of Raghunātha (confusing Raghunātha's title Śiromaṇi with Janakīnātha's title Cūḍāmani). Aufrecht by error attributed to him the parents of Śaṅkara Miśra (two manuscripts were bound together). Gopīnāth (V, 140) corrected Aufrecht but went back to Hall's theory. Finally, the editor of the *Tanjore Catalogue* tries to make him out a grandson of Jagadīśa when he was obviously Jagadīśa's teacher.

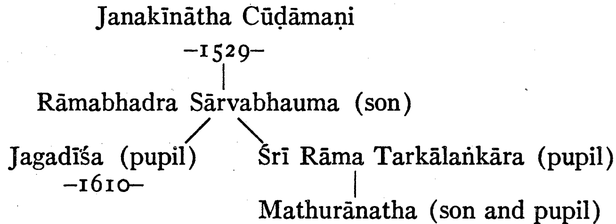
[87] That he was the teacher of Jagadīśa was shown by Chakravarti, p. 282. Jagadīśa in his *Śabda-śakti-prakāśikā* quotes Rāmabhadra's *Nyāya-rahasya* with the remark "so says my teacher in his *Nyāya-rahasya*."

[88] "*Śrī-Sārvabhaumasya guroḥ*," Chakravarti, p. 282.

Nyāyapañcānana.[89] He informs us that he was the son of Cūḍāmaṇi,[90] by which title he must be referring to Janakīnātha Cūḍāmaṇi.[91]

The date of Rāmabhadra Sārvabhauma can be approximated from dates known in the lives of his father and of his pupil Jagadīśa. Haraprasād Śāstri reported (*Ind. Ant.*, 1912, p. 9) discovering a letter sent from Maheśa Ṭhakkur to Tarkika-Cūdāmaṇi, bearing a date corresponding to A.D. 1529.[92] For the other limit, Jagadīśa was teaching in A.D. 1610, for a manuscript is extant bearing that date together with the information that it was copied by Jagadīśa's "devoted pupil, Viṣṇuśarman." [93]

One may resume the preceding information as follows:



This line of succession from Janakīnātha to Mathura helps explain a striking parallel between a passage in Janakīnātha's *Nyāya-siddhānta-mañjarī* and a remark of Mathura's. Janakīnātha insists that the considering leading to an inference cannot be an instrumental cause of the inference, since if it were it would require a further operation: "*so 'yam parāmarśo nânumiteḥ karaṇaṃ vyāpārâbhāvāt*" (*Nyāya-s.-m.*, *The Pandit*, 1908, p. 92; for explanation of the theory involved, cf. Sect. II, §§ 4, 5 below). Mathura, in commenting on Gaṅgeśa's definition of inference (*T.C.*, II, 19), expresses the same opinion, for which he offers exactly the same reason: "*parāmarśasya vyāpārâbhāvenâkaraṇatvāt.*" The parallel is

[89] Gopīnāth, V 149.

[90] "*Tātasya tarka-sarasīruha-kānaneṣu*
Cūdāmaṇer dinamaṇeś caraṇau praṇamya"

— benedictory verse to Rāmabhadra's *Padārtha-khaṇḍana-ṭippanī*, Mitra, Nos. 1132, 1495. For 'Cūḍāmaṇer' *Cat. Tanjore* No. 5980 reads 'tārāmaṇer', an obvious corruption, as is Burnell's 'carāmaṇer' (*Cat. Burnell*, p. 123a).

[91] Janakīnātha is regularly so called in colophons, e.g., "Bhaṭṭācārya-cūḍāmaṇi" (cf. Windisch on No. 1961 of *Cat. I.O.*), and "Nyāya-cūḍāmaṇi" (Chakravarti, p. 273). In the benedictory verse to his *Nyāya-siddhānta-mañjarī* (*Pandit*, vol. 29), he calls himself Janakīnātha Śarman.

[92] The letter, to the best of my knowledge, has not been published. Śāstri identified the Cūḍāmaṇi with Raghunātha Śiromaṇi, but, although the titles are similar in meaning ('crest-jewel' and 'head-jewel') I know of not a single instance in which Raghunātha is called Cūḍāmaṇi.

[93] The MS. is in the private collection of the late MM. Haraprasād Śāstri. It is noticed by Phaṇibhūṣaṇa, Intro., p. 30 and by D. C. Bhattacharyya, *I.H.Q.* XVII (1941), p. 2.

significant not because the theory is unusual, but because Mathura in applying it to this particular passage [94] of Gaṅgeśa is forcing a meaning on the passage which it will scarcely bear, and one of which Raghunātha would certainly have disapproved. Mathura's prejudice is easier to explain when we recognize that he is trained in a school that goes back to Janakīnātha.

The dates of the earliest preserved manuscripts of Mathura's works fit well with his being a generation junior to Jagadīśa. The earliest manuscript of which I know was written in A.D. 1652.[95] Chakravarti's earliest record of a Mathura manuscript was 1675 (p. 278).

Again, Mathura's being a generation junior to Jagadīśa is about what one would judge from his style. In length of compounds, detail of analysis, wealth of argument, his style is somewhat heavier than Jagadīśa's. It is far more developed in these respects than Raghunātha's and rather less so than Gadādhara's.[96]

On the basis of the above, we may certainly assign Mathura to the seventeenth century, or allowing our figures to be in error by as much as 25 years, we may say he lived from c. 1600 to c. 1675.

One cannot better show the worthlessness of the Mathura traditions than by showing how one or two of them have arisen. For example, it is certain that Mathura's *Tattva-cintāmaṇi-rahasya* was one of his later works, for in it he quotes his own *Guṇa-kiraṇâvalī-prakāśa-rahasya* (*V.P.R.*, 14.7) and apparently his *Dīdhiti-rahasya* (cf. Chakravarti, p. 277). In Bengal the *T.C.R.* is very commonly used, while the *Dīdhiti-rahasya* is held in low esteem, the commentaries of Jagadīśa, Gadādhara and others being considered far superior. These facts are combined with the traditional succession of Naiyāyikas: Pakṣadhara — Raghunātha — Mathura,[97] to form the story given by Mitra and Kānticandra Rāṛhī.[98] This story runs as follows: Rāma studied under Raghunātha, but was unjustly neglected in favor of a dunce. Rāma concealed his chagrin, but vowed to himself that he would be revenged. Later, his son Mathura also studied under Raghunātha, proved a brilliant pupil, and began, even while still a pupil, to write a commentary on Raghunātha's *Dīdhiti*. Rāma, delighted at his son's brilliance, persuaded Mathura to give up commenting on the *Dīdhiti,* and to comment instead on the *T.C.* itself; furthermore, to make his commentary so lucid and thorough that in the future no one would read the *Dīdhiti*.

[94] The passage will be discussed in some detail below (Sect. II, 6).

[95] *Cat. Guj.*, fasc. 4, p. 12. The date is 1709 (*saṃvat*, cf. fasc. 1, p. 2, footnote). The MS. is of the *Ākāśa-khaṇḍanam*.

[96] According to the tradition preserved among Gadādhara's living descendants, their ancestor lived from A.D. 1599 to 1703. Since he wrote an enormous amount he may well have lived to a great age. He was certainly living in A.D. 1661, when he was granted 360 *bighas* of land in Mālipotā village. I take this information from Phaṇibhūṣaṇa, Intro., p. 31.

[97] *Śabda-kalpadruma*, p. 1791.

[98] Mitra, I, No. 494; *Navadvīpa-M.*, pp. 65–66.

A less imaginative example of myth making is the story recorded in *Navadvīpa-mahimā*, p. 68: Mathura taught his son, but died before his son had completed his studies. The son refused to continue his studies under a new teacher, and decided, on his mother's advice, to train himself by reading through all the works composed by his father. This he did, and amazed his contemporaries by attaining a thorough understanding of advanced Nyāya without the aid of a teacher. This tradition is nothing more than an expansion into story form of an introductory verse frequently used by Mathura:

"The pandits of logic perform the figures of a dance; yet you who are intelligent, without studying with the dancers, may fearlessly start teaching if you will merely think over this [book] that I have written." [99]

What we really know of Mathura's life, aside from its date, is nothing, except that like his father he was a Vaiṣṇava. One might guess Mathura's persuasion from his personal name, but his Vaiṣṇava leanings are explicit in the following benedictory verses:

"May He rule, whose skin is dark as the fresh rain cloud, who with curved nether lip blows the flute, whose flying fingertips [draw forth music to] delight all the soft-eyed maidens." [100]

"I praise the lover of milkmaids, who dwells in Vṛndāvana, whose eyes are . . . [?], and who is dark as the fresh rain cloud." [101]

The short invocations to Śiva, Parvatī, or Kālī found in some manuscripts of Mathura's works [102] are surely the addition of later scribes.

The *V.P.R.* printed and translated below is, I think, a fair example of Mathura's work. It shows both his virtues and his faults. His great virtue is verbal clarity. No matter how complex the subject, Mathura cuts it up and arranges it in such a way that it appears understandable. For all his protestations of brevity,[103] he never spares a word or paragraph if he feels that his

[99] *Anvīkṣakī-paṇḍita-maṇḍalīṣu*
satāṇḍavair adhyāyanaṃ vinâpi
mad-uktam etat paricintya dhīrāḥ
niḥśaṅkam adhyāpanam ātanudhvam.

Cat. I.O., No. 1954, vs. 4; No. 1948, vs. 3. The printed text *T.C.R.*, II, p. 1, vs. 2 and *T.C.R.* IV, p. 1, vs. 2 reads '*sat-tāṇḍavair*'.

[100] *Kuñcitâdhara-puṭena pūrayan vaṃśikām pracalad-aṅgulī-tatiḥ*
mohayan nikhila-vāmalocanāḥ pātu ko 'pi nava-nīrada-cchaviḥ.

Mitra, II, No. 1013 which reads '*vāma-locanām*' is to be corrected by Mitra, New Series, I, No. 21.

[101] *Navīna-nīrada-śyāma-muñju-muñjula-locanam*
vallavī-vallabhaṃ vande Vṛndāvana-vihāriṇam.

Mitra, III, No. 1153. I do not know what '*muñju-muñjula*' may mean.

[102] E.g., Mitra, New Series I, Nos. 21, 25; Śāstri, New Series, II, No. 10, colophon.

[103] '*iti saṅkṣepaḥ*', *V.P.R.*, 83.5; '*ity āstām vistaraḥ*', *V.P.R.*, 93.4.

meaning is not wholly clear. This is obviously a great pedagogical virtue; to it is due the popularity in Bengal of the *V.P.R.* and the *Siddhānta-rahasya* as introductions to the study of Navya-nyāya.

This virtue is counterbalanced by an annoying pedantry. Mathura will worry an argument to death after he has proved his point. In analyzing definitions he will spend as much time on a poor one as on a good one. For example, his general principle is that an absence is not divisible according to its loci (cf. Sects. II, § 38 and IV, 89. 1–4 notes), yet, in his comment on Gaṅgeśa's second definition, which must be thrown out since it contradicts this principle, he goes to great pains in suggesting various conditions under which an absence might be supposed to be so divisible. These suppositions are quite sophistical and allow Mathura to work out problems that are false from the start.

In some cases Mathura's sophistry may be excused as an exercise in logical technique, useful for young pupils, but there are instances where I believe it exceeds the limits of possible usefulness. For example, in the *V.P.R.* there is generally no distinction made between 'locus of *x*' and 'that which possesses *x*' (cf. Sect. II, §§ 10 and 18); yet, when he is unable to draw any other distinction between Gaṅgeśa's third and fifth definitions, this is the distinction that Mathura finally arrives at and seems to regard as valid.

It would be impossible to draw up a complete bibliography of Mathura's works without examining hundreds of manuscripts in India and Europe. Most of Mathura's works are concerned with one or another of four books: Vallabha's *Līlāvatī*, Udayana's *Kiraṇâvalī*, the same author's *Ātma-tattva-viveka*, and Gaṅgeśa's *T.C.* Mathura frequently commented not only on the *mūla* or basic text, but on other scholars' commentaries on these texts as well. Manuscripts often contain only a chapter or section of one work, and unless the description of such a manuscript is very detailed, it is impossible to say with certainty to just what work it belongs. For example, a report of a *Siddhānta-rahasya* (the Siddhānta-lakṣaṇa is from *T.C.* II) may indicate a part of Mathura's commentary on the *T.C.* itself, or of his commentary on Pakṣadhara's *Āloka* or on Raghunātha's *Dīdhiti*. It is even possible that some such titles may indicate independent works.

In view of what has been said, the following list of Mathura's works makes no claim to completeness. I give manuscript references sufficient only to identify each item; in many cases further references may be found in the *Cat. Cat.* In print, I have seen only Nos. 8, 11, and the beginning of 7. An edition exists, however, of the Vyāpti-pañcaka section of No. 10.

A. Works based on Vallabha's *Nyāya-līlāvatī*.

1. *Nyāya-līlāvatī-rahasya*. Commentary on the basic text. Mitra, Nos. 1077, 1202.

2. *Nyāya-līlāvatī-prakāśa-rahasya.* Com. on Vardhamāna's Com. on the b.t. Mitra, No. 1201.
3. *Nyāya-līlāvatī-prakāśa-dīdhiti-rahasya.* Com. on Raghunātha's Com. on Vardhamāna's Com. on the b.t. Mitra, No. 1089.

B. Works based on Udayana's *Kiraṇâvalī.*

4. *Kiraṇâvalī-rahasya.* Commentary on the basic text. I find only the second half (the *Guṇa-rahasya*) of this work preserved and this only in one MS. *Cat. I.O.* 5069.
5. *Kiraṇâvalī-prakāśa-rahasya.* Com. on Vardhamāna's Com. on the b.t. Mitra, No. 2124. Possibly only the second half (*Guṇa-rahasya*) is preserved. Of the *Cat. Cat.* references, none is specifically stated to include the *Dravya-rahasya.*
6. *Kiraṇâvalī-dīdhiti-rahasya.* Com. on Raghunātha's Com. on Vardhamāna's Com. on the b.t. *Cat. Jam. and Kash.,* p. 143. First half very rare (*Cat. Cat.* lists only one incomplete MS).

C. Commentary on Udayana's *Ātma-tattva-viveka.*

7. *Bauddha-dhikkāra-vivṛti.* The printing of this was undertaken in the B.I. ed. of the *Āt.-t.-v.* (1907–), but this edition was never completed.

D. Works based on Gaṅgeśa's *T.C.*

8. *Tattva-cintāmaṇi-rahasya.* Commentary on the basic text. The majority of entries in the *Cat. Cat.* under Mathura are of MSS. of portions of this enormous work. Much the greater part of No. 8 has been printed in B.I. Besides this there are several printed editions (some in Telegu characters, which I have not seen) of separate sections of Bk. II. Of these, the Kashi editions of the *V.P.R.* and the *Siddhānta-lakṣaṇa-rahasya* are valuable for their modern supercommentaries by Śivadatta Miśra.
9. *Tattva-cintāmany-āloka-rahasya.* Com. on Pakṣadhara's Com. on *T.C.* MSS. of Bk. IV common, Bk. I less so, Bk. II very rare (I find only 3 fragments: *Cat. I.O.* 1935–36 and *Cat. Berlin,* p. 201, No. 671, the last not certain), Bk. III missing.
10. *Tattva-cintāmaṇi-dīdhiti-rahasya.* Com. on Raghunātha's Com. on *T.C.* Almost all the MSS. are of Bk. II. *Cat. Jam. and Kash.,* however, gives a few fragments of Bks. I and IV. The Vyāpti-pañcaka section of Bk. II has been edited and translated into Bengali by Rājendranātha Ghose, Lotus Library, Calcutta, 1915.

E. Other commentaries on Raghunātha.

11. *Ākhyāta-vāda-vivṛti.* Commentary on Raghunātha's *Ākhyāta-vāda.* Published *T.C.* IV, pp. 867–1006.
12. *Nañ-vāda-vyākhyā.* Commentary on Raghunātha's *Nañ-vāda. Cat. Jam. and Kash.*, p. 147.

F. Miscellaneous.

13. *Āyur-dāya-bhāvana.* Known only from Mitra, VI, No. 2241. [Fragment of?] a commentary on the *Āyur-dāya,* an astrological work dealing with the computation of human longevity. A portion of an '*Āyur-dāya*', probably the work on which M. comments, was among the Leipzig MSS. (*Cat. Leipzig,* 1086). *Cat. Tanjore* lists another commentary (Nos. 11316–19) apparently on this same work.
14. *Pāṇigrahâdikṛtya-viveka.* Known only from Mitra, IX, No. 3164: "A digest of the rules regarding the marriage ceremony and the most appropriate astrological conjunctions for the same."
15. *Ākāśa-vāda.*
16. *Ākāśa-khaṇḍana.*
    One is tempted to ascribe 16 to a commentary on Raghunātha's *P.T.N.* (cf. *P.T.N.*, pp. 3–10), but both 16 and 15 may belong to the *Dravya-kiraṇâvalī.* For 15, *Cat. Cat.* refers only to Hall, p. 45; for 16, only to *Cat. Guj.*, but there seem to be other listings of 16, viz., *Cat. I.O.* Nos. 2132 and 2133, where, however, the name of the author is missing.

A search of the libraries of Benares and Calcutta might well discover several portions reported as missing in the above list.

SECTION II

AN EXAMINATION OF SOME THEORIES AND TECHNIQUES OF NAVYA-NYĀYA LOGIC

1. The *Vyāpti-pañcaka*

The *Vyāpti-pañcaka* is a list of five definitions taken from the Second Book of Gaṅgeśa's *T.C.* They are the first five of a series of definitions leading up to the *siddhānta-lakṣaṇa* or accepted definition of pervasion (*vyāpti*). Most Navya-naiyāyikas have commented on these definitions, endeavoring to render them as exact and applicable to as many cases of pervasion as possible. Each definition, however, proves defective in certain cases.

2. Pervaded (*vyāpya*). Pervader (*vyāpaka*). Pervasion (*vyāpti*) [1]

The verb '*vyāpnoti*' means, literally, pervades or fills completely, as water fills a jug or salt pervades the sea. The gerundive '*vyāpya*' is literally 'pervadend(um)' and means, approximately, filled by, or the thing to be filled, such as the jug or the sea. '*Vyāpaka*' means the pervader, the water in the first case, the salt in the second. *Vyāpti* or pervasion is the situation resulting from a relation of pervader and pervaded.

Roughly speaking, in Navya-nyāya one term is said to pervade another when it occurs in all or more than all the loci of that other. Consider the case of fire and smoke. Wherever there is smoke there is fire. Thus smoke is pervaded by fire. But fire may occur where there is no smoke, e.g., in a red-hot iron. Fire is not pervaded by smoke. All similar cases can be represented by two concentric circles; the greater pervades the smaller, the smaller is pervaded. If the two circles coincide, either may be said to pervade or to be pervaded by the other.

In apparent but not real contradiction to this explanation is the custom of calling 50 rupees the pervader of 100 rupees. Āthalye (*T.S.*, p. 246) gives the reason: 50 rupees has more loci than 100 rupees; wherever one has 100 rupees one has 50 rupees, but not vice versa. Here the loci are taken as the occurrences of the sums rather than the individual rupees composing the sums.[2]

Both the importance and the difficulty of defining pervasion exactly are indicated by the large number of definitions the Naiyāyikas have given of the term and the huge mass of exegetical material that has gathered about these

[1] Cf. Āthalye, *T.S.*, pp. 245 ff.

[2] Keith (p. 115, n. 4) misinterprets this example. The number 50 does not pervade the number 100. The loci of the numbers 50 and 100 are mutually exclusive (see below, § 51).

definitions. The *Nyāya-kośa* lists 21 defective and 13 accepted definitions of pervasion. Many of these are associated with the names of individual logicians, as the three definitions of Cakravarti, the three of Pragalbha, the three of Miśra.[3] They were studied in groups such as the *Vyāpti-pañcaka,* the Lion and Tiger Definitions, the 14 Definitions of the *Vyadhikaraṇa-prakaraṇa,*[4] etc. There exist hundreds of manuscripts of commentaries on these single groups.

The purpose of this Introduction is not to discuss these definitions in detail, but to explain the ideas and techniques used in the introductory account of pervasion given by the subjoined texts. Pervasion owes its importance in Navya-nyāya to its central position in Nyāya epistemology. Accordingly, it is with some basic theories of this epistemology that our explanation must begin.

3. The Four Types of Valid Knowledge; the Instruments Producing Them

In general the Navya-nyāya follows the Old Nyāya in recognizing four types of valid knowledge (*pramā* or *pramiti*): [5] perception (*pratyakṣa,* here meaning that which is perceived); inference (*anumiti,* that which is inferred); identification (*upamiti,* that which is identified); [6] and verbal knowledge (*śabda-ja-jñāna, śābda-bodha*). Each of these is distinguished by a special instrument (*pramāṇa*) for its production: the perceptual instrument (*pratyakṣa-karaṇa*), the inferential instrument (*anumiti-karaṇa* or *anumāna*), the identifying instrument (*upamāna*), and the verbal instrument (*śabda,* word).

All teachers of Navya-nyāya regarded inference (*sc.* that which is inferred) as caused either directly or indirectly by a knowledge of a pervasion. Note that

[3] These nine definitions are all discussed by Raghunātha. They are referred to by the above names by Jagadīśa, I, 123, 130, and 134.

[4] *R. Jāg.*, I, 99–170.

[5] In what follows I shall always use 'knowledge' to mean that which is known, not the act of knowing. Similarly, by 'inference' I shall mean that which is inferred, not the act of inferring.

The suffix '*-ti*' in '*pramiti*' '*anumiti*' '*upamiti*' is etymologically related to the '*-ti*' in Latin '*cognitio*', '*inferentia*', etc. In older Sanskrit and in the nontechnical language, this suffix suffers from the same ambiguity as does the Latin suffix, that is, it may mean the act of x-ing or it may mean that which is x-ed. The confusion to which this has given rise in European philosophy is well known. To avoid precisely this confusion, Navya-nyāya restricts the suffix '*-ti*' to the second meaning.

[6] I borrow this translation of '*upamiti*' from Foucher, who gives excellent reasons (pp. 148 ff.) for preferring it to the usual translation 'analogy'. An example of an *upamiti* is the knowledge 'This is a rhinoceros' which arises in the soul of one who first sees this animal. The *upamiti* arises from the sight of the beast as helped out by the memory of a statement from an informed person that a rhinoceros is a one-horned animal somewhat smaller than an elephant. The example is from Candrasiṃha's *Padakṛtya* on the *T.S.* The Naiyāyikas insist that *upamiti* is a distinct form of knowledge, but actually it would seem to be half verbal knowledge and half inference.

the inference is not caused by the pervasion *per se*. It is to its cardinal position in the inferential process that pervasion owes its importance in Navya-nyāya. As to just how a knowledge of pervasion causes inference there were two theories, which I shall refer to as Gaṅgeśa's Theory and the Modified Theory.

4. The Inferential Process; Gaṅgeśa's Theory

All noneternal entities are the result of a complex of causes [7] and of operation (*vyāpāra*). The complex of causes consists of such universal causes as God and time, and of certain special causes, distinguished as the cause inhered in (*samavāyi-kāraṇa*), that not (directly) inhered in (*asamavāyi-kāraṇa*), and the instrumental cause (*nimitta-kāraṇa* or *karaṇa*). The instrumental cause of a pot is the stick which forms it; [8] the operation is the coming together [9] of the stick with the clay. To take another example, the ax is the instrumental cause of felling the tree, but the action of the ax in coming together with the tree is the operation.

The knowledge of man is noneternal, and like all other noneternal things must be the product of causes and operation. Each of the four processes leading to valid knowledge may be analyzed; the instrumental cause producing each and the operation of this instrument may be stated. Gaṅgeśa, and following him closely, Viśvanātha, analyze the inferential process as follows.

The instrumental cause of an inference is the knowledge of a pervasion (*vyāpti-jñāna, T.C.*, II, 550; *vyāpti-dhī, Bh.P.*, 66). In the case of the inference: '*parvato vahnimān dhūmāt*' — '[the] mountain possess(es) fire because of smoke',[10] the instrumental knowledge will have been in the form of: '*vahni--vyāpyo dhūmaḥ*' — 'smoke (is) pervaded by fire'.

The operation is called a consideration (*parāmarśa*), and this is defined as a knowledge of the occurrence in a *pakṣa* (field, minor term) of that which is qualified by pervasion.[11] In the example of inference given above, the operative

[7] *Bh.P.*, 15.

[8] *Bh.P.* and *S.M.*, 16–18. The cause inhered in is the atoms in which the pot inheres, the cause not directly inhered in is the quality conjunction that inheres in the atoms. The potter is not a cause (*kāraṇa*) but a causer (*kartṛ*). Other factors such as the potter's father, etc., are ruled out. *Bh.P.*, 19–22.

[9] Coming together here is an action (*kriyā*), and so must be distinguished from the quality (*guṇa*), conjunction, that resides in two bodies that *have come* together.

[10] The meaning of the parentheses in this and similar quotations will be explained later.

[11] *T.C.*, II, 2, "*vyāpti-viśiṣṭa-pakṣa-dharmatā-jñāna.*" This is expressed more simply by *Bh.P.*, 68 as "*vyāpyasya pakṣa-vṛttitva-dhīḥ.*" Some Naiyāyikas interpret Gaṅgeśa's definition differently, making the word '*viśiṣṭa*' modify '*jñāna*' instead of '*pakṣa-dharmatā*'. So Annambhaṭṭa, *T.S.*, 35. The supercommentator Nīlakaṇṭha gives the reason: the normal interpretation will not fit a certain type of false inference, the *vyabhicāri-hetu* type, where the *hetu* (middle term) does not actually occur in the *pakṣa*. But if one interprets the definition to

knowledge will have been in the form of: '*vahni-vyāpya-dhūmavān parvataḥ*' — '[the] mountain possess(es) smoke pervaded by fire'.

The result of this instrumental cause and operation is an inference. In the above example the inference, strictly speaking, will be in the form: '*parvato vahnimān*' — '[the] mountain possess(es) fire'. In treatises and debates, it is the practice to append to the strict inference a one-word summary of its previous stages, thus: '*parvato vahnimān dhūmāt*' — '[the] mountain possess(es) fire because [it possess(es)] smoke'.[12]

Gaṅgeśa's theory is followed by Mathura, Viśvanātha, Laugākṣi Bhāskara (*T.K.*, p. 10, lines 24–26) and others.[13]

5. The Inferential Process; Modified Theory

The Navya-nyāya had also a modified theory of the inferential process, which I may summarize very briefly since it has been explained by Āthalye,[14] and since it does not affect the texts presented here.

According to this modified theory, instrumental cause is defined as that cause which is distinguished from all others that are not immediately connected with the result.[15] In other words, that which the usual theory considers as the operation of the instrumental cause, the modified theory regards as the instrumental cause itself. The reason for adopting this theory appears to have been the difficulty of imagining an operation (i.e., an action, a member of the third category) inhering in anything other than a substance. Knowledge was considered to be a quality, not a substance, for it inheres in the soul.

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mean "a knowledge of an occurrence in the *pakṣa*, which knowledge is qualified by [referring to] a *vyāpti*," false inferences will be covered as well as true. Note that the second interpretation not only parses the compound differently but alters the meaning of '*viśiṣṭa*'.

[12] Actually this practice is a survival from the earlier school, where the *hetu* (probans, middle term, here equals smoke) was considered to be the instrumental cause of the inference. However, the Navya-nyāya understands such an expression as 'the mountain possess(es) fire because of smoke' as an abbreviation for 'the mountain possess(es) fire because it possess(es) smoke pervaded by fire'.

[13] I do not know how far this theory may antedate Gaṅgeśa.

[14] Āthalye, *T.S.*, 187 ff.

[15] "*phalâyoga-vyavacchinaṃ kāraṇam*," Āthalye, *T.S.*, 187, without quoting source. *N.K.*, *s.v. karaṇam* quotes it only from commentaries on *T.S.* and *S.P.*, and from a grammatical work. Raghunātha (e.g., *R. Jāg.*, I, 70, line 4) speaks of the instrumental cause as immediately preceding the result (*phalôpahita*), which amounts to the same thing. Śivāditya must have known the definition in the form given by Āthalye and *N.K.*, for in *S.P. Calc.*, 124 he defines *anumāna*, by which he understands the instrumental cause of inference (cf. 122) as "that which is distinguished from all other causes which are not immediately connected with the valid knowledge of inference (*anumiti-pramâyogya-vyavacchinnam*)."

The modified theory must have been current before Gaṅgeśa's time, since it is accepted in the *S.P.* Its most famous protagonist was Raghunātha.[16]

6. A Note on the Use of '*Anumāna*'

The reader may prefer to leave this note until he has read through Sect. II. It is inserted here because the ambiguity of the term '*anumāna*' demands some notice in even the briefest account of Nyāya theories of inference.

'*Anumāna*' is used more consistently in Navya-nyāya than in the Old School. In general the Navya-naiyāyikas mean by it the instrumental cause of inference. Accordingly, an author's use of '*anumāna*' depends on which theory he follows with regard to the inferential process. Those who follow Gaṅgeśa's theory use '*anumāna*' of the knowledge of the pervasion, while those who follow the modified theory use it only of the operation. The former usage is that of Mathura, Viśvanātha, and Bhāskara,[17] while the latter is that of Śivāditya, Raghunātha, Annambhaṭṭa, etc.[18]

There is one curious exception to this division of usage; the exception is furnished by Gaṅgeśa himself. Gaṅgeśa's definition of inference is certainly ambiguous, but I would suggest the following translation and interpretation: [19] "Inference is a knowledge born of a [former] knowledge of the nature of a minor term such as is qualified by a pervasion; the instrumental cause of this is *anumāna*, and this is the considering of the middle term, not the considered middle term." [20] I take this to mean that *anumāna* is both the instrumental cause and the operation. I do not insist on this interpretation, but it has this in its favor: it is close to the meaning of '*anumāna*' accepted by Udyotakara of the Old School, who says (*N.V.*, I, p. 143, lines 2 ff.) that *anumāna* may include all the causal elements leading up to an inference, but that it is most properly used of

[16] Keith (p. 115) claims that Gaṅgeśa also follows this theory. The passage to which he refers is quoted below (§ 8). The following facts, I think, show that Keith was mistaken. Gaṅgeśa, *T.C.*, II, p. 550 (quoted by Sen): "the instrumental cause is the knowledge of pervasion, the operation is a considering (*vyāpti-jñānaṃ karaṇam, parāmarśo vyāpārah*)." There are many other passages where the considering is called a *kāraṇa* rather than a *karaṇa* (cf. Sen's references, p. 8 and *T.C.*, II, pp. 691–692). In the *prāmāṇya-vāda* section of the *T.C.* (I, pp. 114–429), the merit that is the special cause of inference is the seeing of the middle term (*liṅga-darśana*). This is a special cause (*asādhāraṇa-kāraṇa*, *T.C.*, I, p. 307), not instrument (*karaṇa*).

[17] Mathura, *T.C.*, II, p. 19 (referred to by Sen). For Viśvanātha, compare end of *S.M.*, 51 with *Bh.P.*, 66. Bhāskara, *T.K.*, p. 10, lines 24–25.

[18] *S. P. Calc.*, 124; *R. Jāg.*, p. 70; *T.S.*, 34, 39.

[19] Mathura, Keith, and Sen each offers a different interpretation.

[20] "*vyāpti-viśiṣṭa-pakṣa-dharmatā-jñāna-janyaṃ jñānam anumitiḥ tat-karaṇam anumānaṃ tac ca liṅga-parāmarśo na tu parāmṛṣyamānaṃ liṅgam*" (*T.C.*, II, p. 2). Mathura, commenting on this, says that 'considering the middle term' means 'knowledge of pervasion', because the considering could not be an instrumental cause without having [a further] operation. For the similarity of this remark to a passage of the *Nyāya-s.-m.*, cf. Sect. I, p. 22. Obviously the remark is out of place here.

the last one, the considering (*parāmarśa*), because of its importance.[21] Gaṅgeśa's use of '*anumāna*', if I am right, differs from that of other Navya-naiyāyikas simply in being closer to that of the Old School.

The term '*anumāna*' had still other meanings in the Old School. They rarely occur in Navya-nyāya. However, in the terms '*svârthânumāna*' (inferring for oneself) and '*parârthânumāna*' (inferring for others), '*anumāna*' is best taken to mean the act of inferring (i.e., as defined by *N.Bh.*, 1/1/3).

7. The Two Syllogisms. Ascripts, Assertions, and Knowledges

Modern Western logic distinguishes between ascripts and assertions. An ascript merely associates a predicate with a subject or a relation with its terms, e.g., 'John's being rich' or 'John's being the father of William', whereas an assertion (statement or proposition) asserts this predication or relation as a fact, e.g., 'John is rich' or 'John is the father of William'. Indian logic from the most ancient times also distinguishes the two.

The following is the stock example of a syllogism in the Old Nyāya. It consists of five members.

(1) Theory (*pratijñā*): [The] mountain — possess fire
(2) Cause (*hetu*): because of smoke.
(3) Example (*udāharaṇa*): Where [there is] smoke there [is] fire, as in a kitchen, etc.
(4) Application (*upanaya*): This [mountain is] similar [i.e., possesses smoke].
(5) Conclusion (*nigamana*): Therefore [it is] similar [i.e., possesses fire].[22]

Since the Sanskrit expression of this contains no finite verb, one might not be certain that the first two members are an ascript and the last three assertions if the ancient authors did not give us further enlightenment. But *N.Bh.* 1/1/39 clearly states that the theory (*pratijñā*) is "only something possible" (*sambhavas tāvat — pratijñā*). It is this that distinguishes it from the conclusion. It is equally clear that the fourth member was understood as an assertion, and that without (4) one could not assert (5).[23]

Since communication between humans requires that we assert our ideas, the Navya-nyāya continues to use this traditional five-membered syllogism for proving a point in debate (*parârthânumāna,* inferring for the sake of others). But assertion is not necessary when inferring for oneself (*svârthânumāna*), and this is the type of inferring with which Navya-nyāya is chiefly concerned.

[21] He adds that its importance is owing to its proximity to the result.

[22] In Sanskrit: (1) *Parvato vahnimān.* (2) *dhūmāt.* (3) *yatra dhūmas tatra vahnir yathā mahānasâdau.* (4) *Tathā câyam.* (5) *Tasmāt tathā.*

[23] Faddegon (p. 297) notes of the classical five-membered syllogism that "it resembles more our hypothetical than our categorical syllogism." The same is noted by Radhakrishnan (II, p. 90).

Inferring for oneself consists of the three-stage process we have described, namely, knowledge of pervasion, operative knowledge, and knowledge of inference. One may conceive of this three-stage process as a nonassertive syllogism. Just what the value or mode of its stages is, is hard to say. They are not simply ascripts, for inference even when produced for oneself is a valid form of knowledge, and valid knowledge (*pramā*) is defined as knowledge corresponding to what the world really is. They are certainly not assertions, for the Naiyāyika would then have no need of recourse to the five-membered syllogism. To the Naiyāyika these pervasions, operations, and inferences are simply knowledges (*jñānāni*) and I shall adhere to this term despite its awkwardness in English. In translating, I shall distinguish the expression of such knowledges from the expression of assertions by placing them in single quotes and including in parentheses the letters necessary to furnish the expression with a transitive verb, thus: 'the mountain possess(es) fire' or 'the mountain (is) a locus of fire'.[24]

A knowledge is conceived to be a member of one of the 24 types of quality. It performs a double role. It contains or frames representations of the outside world which are elicited from sense-object contact or from previous knowledges, and at the same time it inheres in the self or soul (*ātma*). One may imagine the self as a mirror on which pictures are flashed. The shape or the whole of an individual picture is a knowledge. The elements of the picture are the knowledge-content representing the outside world. The self does not judge of the truth or falsity of these pictures. If there is no fault in the mechanism producing them, they are valid knowledges, otherwise they are false.

If the distinction between an ascript and an assertion is directly important to logic, the distinction between an assertion and a knowledge is at least indirectly so. Consider first the psychological fact that it is more difficult to hold consciously a false knowledge than it is to make a false assertion. This fact might also be expressed: it is more difficult consciously to misinform oneself than to misinform others. A consideration of this fact will lead one to understand why the Naiyāyika refuses to admit sky lotuses and impermanent souls into his syllogisms for oneself.

Consider also that the Naiyāyika is an extreme realist. If a false knowledge slips into one of the stages preceding his inference, this inference will be wrong. As a realist, the Naiyāyika will not be satisfied that the reasoning process itself is right, for what is the use of that if the final result is error? The nonassertional syllogism is a symptom of the realist outlook of the Naiyāyika. Both his outlook and his technique narrow the area of logic which he is willing to examine. West-

[24] The purpose of the parentheses is *solely* to indicate that the expression refers to a knowledge. Although the Navya-nyāya expression of a knowledge usually (always in the texts printed below) lacks a finite verb, it does not necessarily lack it.

ern logic, either classical or modern, has no such prejudice against false statements.[25]

8. Condition Requisite for the Operation to Take Place

According to the theory given in § 4 above, knowledge of a pervasion is the instrumental cause of inference. But this is not to say that knowledge of a pervasion always creates an inference, any more than an ax always fells a tree. The operation must occur, and this will occur only under certain conditions. As one looks at a smoking mountain one does not keep on making countless inferences that the mountain has fire.

The condition requisite for the operation to take place is given in an interesting way by the *S.M.*[26] It says that one only infers an inference when there is not the combination of one's knowing the answer (*siddhi*) and one's not wishing to work it out (∼ *siṣādhayiṣā*).[27] Under this condition, knowledge of a pervasion always produces an inference.

9. Terms of the Inference; *s, h,* and *p*

Three terms are implicit in all inferences given in the full form (viz., with appendage; cf. § 4): the *sādhya* (hereafter abbreviated '*s*'), that which one wishes to prove, i.e., the major term; the *hetu* ('*h*'), the cause, also called the *liṅga* or sign, i.e., the middle term; and the *pakṣa* ('*p*'), that in which when *h* is known to reside, *s* can be inferred to reside, i.e., the minor term.[28] In our stock example, fire is *s*, smoke is *h*, mountain is *p*.

10. Form of the Inference

The normal form of an inference, if we use the abbreviations given in § 9, is: *p* *s* + possessive suffix *h* in ablative case. 'Because of *h*' is an abbreviation for

[25] Navya-nyāya manages to deal with something very like false statements in its treatment of alternation and its negate. See below, §§ 35, 36. But even here Nyāya realism is apparent. Such a statement as 'either fire is water or fire occurs on that mountain' appears as a knowledge expressed by a simplex and a compound: 'In-fire (is) water/onthatmountain-occurrence-alternation'. The compound word 'water/onthatmountainoccurrence-alternation' is treated as a single term expressing a property of fire.

[26] The definition is derived from Gaṅgeśa, *T.C.*, II, 431.

[27] *S.M.*, 70. Viśvanātha proceeds to analyze ∼ (*siddhi* · ∼ *siṣādhayiṣā*) so as to show that the restriction allows:

(1) *siddhi* · *siṣādhayiṣā*
(2) ∼ *siddhi* · ∼ *siṣādhayiṣā*
(3) ∼ *siddhi* · *siṣādhayiṣā*

That is, *S.M.* actually gives the truth table of material implication without using any word for material implication. A brief explanation of truth tables is given in § 35 below.

[28] Since the relation between *s* and *h* is one of pervasion, *h* may be equal to *s* (cf. § 2). In such cases, it is only by an extension of the literal meanings that one can speak of 'major', 'middle', and 'minor' terms. This is one reason why I prefer to keep the Sanskrit names, '*s*', '*h*', and '*p*'.

'because it possess(es) *h* pervaded by *s*', cf. § 4, note 12. Sometimes *p*, being clear from context, is not stated, as in examples (*b*) and (*c*) below.

Examples:

(*a*) *parvato*	*vahni-mān*	*dhūmāt*
mountain	fire-possessing	because of smoke

i.e., '[The] mountain possess(es) fire because [it possess(es)] smoke'.

(*b*) *sattā-vān*	*jāteḥ*
reality-possessing	because of generic character

i.e., '[It] possess(es) reality because [it possess(es)] a generic character'.

(*c*) *kapi-saṃyogī*	*etad-vṛkṣatvāt*
contact-with-monkey-possessing	because of this-tree-ness

i.e., '[It] possess(es) contact with a monkey because [it possess(es)] this-tree-ness [i.e., because it (is) this tree]'.

For 'possess(es)' (*-mant, -vant, -in*), one may substitute the synonym '(is) a locus of' (*adhikaraṇa*).

11. Variation from the Normal Form of Inference

There is one variation from the normal form of stating inferences. It occurs when an entity is inferred from its definition, as:

pṛthivī	*gandha-vat-tvāt*
'[It] (is) earth	because [it possess(es)] scent-locus-ness [i.e. because it (is) a locus of scent]'.

Here *s* is not earth but earthness (the generic character common to all earthen things). The above is actually an abbreviation of the following:

pṛthivītva-vān	*gandha-vat-tvāt*
'[It] possess(es) earthness	because it (is) a locus of scent'.

'Earthness-possessing' has been simplified to 'earth' since the two are synonymous by the rule *'tat-tva-vat tad eva'*—'locus of the property peculiar to *x* is *x*'. In two-word expressions of inference where the first noun is not followed by a possessive suffix, one must be careful not to take this noun as representing *s*.

12. Specifying Terms and Relations

A pervasion contains explicitly two terms, *s* and *h*. To define the relation between these terms, it is obvious that one must specify exactly what is meant

by *s* and *h*. Furthermore, *s* and *h* cannot be considered *in vacuo*. An entity becomes a *sādhya* or *hetu* only by being connected with other entities. We must specify what these connections are. The knowledge that a *sādhya* stands in a relation of contact, for instance, is very different from the knowledge that that *sādhya* stands in a relation of inherence. If *s* is fire, it may be in contact with a mountain or a hearth, while by inherence it has no relation to these. Obviously, the relation between *s* and *h* will differ as the relation between *s* and its loci differs.

Navya-nyāya specifies its terms and relations largely by four means: qualifiers (*viśeṣaṇa*), abstract properties (*dharma*), describer-described pairs (*nirūpaka, nirūpita*), and limitors (*avacchedaka*). An understanding of qualifiers requires a brief summary of the categories and of the theory of determinate and indeterminate knowledges.

13. The Categories (*padārtha*)

The conservative members of the Navya-nyāya assign every entity in the universe to one or another of the following seven categories:

(1) Substance (*dravya*). The nine traditional substances are: earth, water, *tejas* (heat, light, fire, German *Glut*), wind, *ākāśa* (also called *kha, vyoma, gagana*; these all mean both ether and sky), time, *dik* (space, direction), *ātma* (self, soul), and mind (*Bh.P.*, 3). Substance is the only category whose members enter into a relation of contact. Substances inhere in their parts.

(2) Quality (*guṇa*). The 24 traditional qualities will be found listed in *Bh.P.*, 3–5. They inhere only in substances. Qualities like *rūpa* (color, form), taste, scent, etc. inhere in the material substances. Qualities like pleasure (*sukha*), pain (*duḥkha*), knowledge, etc. inhere in the soul. Some qualities, such as number and contact, inhere in all nine kinds of substance.

(3) Action (*kriyā*). Actions are divided into five types (cf. *Bh.P.*, 6). Like the qualities, they inhere only in substances.

(4) Generic character (*jāti*). In non-Nyāya Sanskrit '*jāti*' often means class or genus, but in Nyāya *jāti* is not the genus itself but that characteristic by which the genus is recognized in the individual. The *jāti* of a horse is horse-ness. This is not the class of all horses in the sense in which 'class' is used in common speech. Generic characters inhere in substances, qualities, and actions. They will be discussed more fully in § 15 below.

(5) Ultimate difference (*viśeṣa*). Ultimate difference is that entity residing in an atom, in virtue of which that atom is different from other atoms. The reason for recognizing ultimate difference as a category was this: Entities differ because their parts differ. The smallest parts are the atoms. Since these are indivisible, they cannot differ as do other entities by difference of their parts.

Accordingly, they were said to differ because of ultimate differences residing in them.

(6) Inherence (*samavāya*). Inherence is that in virtue of which substances are related to their parts, qualities and actions to substances, and generic characters to substances, qualities, and actions. Further particulars will be given below (§ 49).

(7) Absence (*abhāva*). This will be discussed below (§ 27 and following).

All but the last of these categories go back to the oldest extant Vaiśeṣika text.[29] Absence also is a Vaiśeṣika addition.[30] The system as given above appears to be accepted by Gaṅgeśa and Mathura, as it certainly is by Viśvanātha.

Raghunātha, on the other hand, shows that the traditional categories, their definitions and their members, are almost wholly illogical. With regard to ultimate difference he says quite properly that it is as reasonable to suppose that the atoms are by nature distinct, as to suppose further entities whose nature it is to distinguish, residing in them. He deals with the blind belief in tradition in a manner not only scientific but not without humor. "Yogis [are said to] see ultimate difference. Well, then, let them be asked on their oath whether they [really] see ultimate difference or not." [31] With equal propriety he denies that there is any generic character peculiar to the 24 qualities,[32] thus implying that they do not form a category of their own. He calls the qualities indivisible imposed properties (*akhaṇḍôpādhi*); to inherence,[33] absence,[34] and some if not all generic characters [35] he gives the same name. Of the traditional categories he leaves unassailed only substance and action.[36]

A logician cannot fail to be delighted with the destructive part of Raghunātha's *P.T.N.* It is logical and unhampered by tradition.[37] Of the constructive part one must remain more critical. Raghunātha supplies a large number of

[29] *Vaiśeṣika-sūtra,* 1/1/4.

[30] Gopināth, III, pp. 117 ff.

[31] *P.T.N.*, pp. 30–32.

[32] *P.T.N.*, p. 51.

[33] *P.T.N.*, p. 76. For details, cf. §§ 49 and 50 below.

[34] *P.T.N.*, p. 49.

[35] *P.T.N.*, p. 48.

[36] However, he attacks the traditional list of substances and the traditional definition of action. Space, time, and God, he says, are all one and the same thing, not separate substances (*P.T.N.*, pp. 1–2). Action may reside in only part of an entity (*P.T.N.*, p. 37).

[37] Faddegon's admiration of the Vaiśeṣika categories (pp. 108–111, 141–146) is based on his acceptance of Sigwart's philosophy of logic. Certainly there is no formally demonstrable difference between, for example, classes and primary qualities. Categories are harmful in a formal logic when they do not correspond to formally demonstrable differences. By this I do not mean to deny the possible usefulness of such categories in metaphysics or psychology.

categories in the place of those he has dismissed.[38] It would require a detailed study of all Raghunātha's works to determine the usefulness of these new categories.

14. Determinate and Indeterminate Knowledge

According to the Navya-naiyāyikas, all objects in the universe, of whatever category, are knowable, if not by us, then at least by God. Our knowledge of these objects is of two sorts: *nirvikalpaka* or indeterminate knowledge, and *savikalpaka* or determinate knowledge.[39]

A determinate knowledge is a knowledge the object of which is distinguished from other things. A pot may be before my eyes, but until I differentiate it from cloth and ground and dog and cat, my knowledge of it will remain indeterminate. To so differentiate or determine the pot, I must have, beyond the indeterminate knowledge of pot, at least two other knowledges: first, an indeterminate knowledge[40] of a differentiating factor (in this case pot-ness, the generic character common to all pots), and second, a knowledge that this thing in front of my eyes is distinguished by this differentiating factor. Since this last knowledge implies indeterminate knowledges of an entity and of that entity's distinguishing characteristic, it is taken as the minimum requirement of all determinate knowledges. Determinate knowledge is accordingly defined as knowledge penetrating the relation between a qualificand (*viśeṣya,* in our example = pot) and a qualifier (*viśeṣaṇa,* in our example = pot-ness) (*viśeṣya-viśeṣaṇayoḥ sambandhâvagāhi jñānam*).[41] Such a knowledge may be expressed simply as: 'this (is) a pot'. One cannot rightly have such a knowledge unless one is conscious of an entity's connection with the generic character common to all pots. Through being conscious of this relation, one is able to assign the entity a name, 'pot'.[42]

[38] In the *P.T.N.* Raghunātha sets up the following new categories: number (*saṃkhyā*), p. 75; qualification (*vaiśiṣṭya*), p. 76; power (*śakti*), p. 65; the atomic moment (*kṣaṇa*), p. 58; causality (*kāraṇatva*), p. 71; effect-ness (*kāryatva*), p. 74; personal property (*svatva*), p. 62. Cf. also *N.K.*, *s. v.* padārtha, where a number of categories other than the above are also attributed to Raghunātha.

[39] For determinate and indeterminate knowledge, cf. S. C. Chatterjee, *Nyāya Theory of Knowledge*, pp. 207–227. This gives some account of all the classical theories (not only the Nyāya) on the subject. Brief but useful summaries of the Nyāya theory are given by Dr. Satkari Mookerjee in his Intro. to *S.M.Ma.*, pp. xv–xx, and by *B.N.*, pp. 19–20.

[40] If this knowledge were determinate, it would presuppose a further indeterminate knowledge, etc., *ad infinitum.*

[41] *B.N.*, p. 20, line 8. Cf. *S.M.*, 58. The definition goes back to the *Nyāya-vārttika-tātparya-ṭīkā*; cf. Chatterjee, p. 215, n. 4.

[42] The above is the simplest possible sort of determinate knowledge. Most determinate knowledges, and all apperceptions, are more complex, are *viśiṣṭa-vaiśiṣṭyâvagāhi-jñānāni* — knowledges that penetrate the relation in which a qualified qualifier stands, e.g., 'I know

One cannot express an indeterminate knowledge in words, for words all refer to determined objects. One does not even know, except by inference, that one experiences indeterminate knowledges, for one apperceives only that which one can express. The necessity of assuming indeterminate knowledges lies simply in this, that determinate knowledges are conceived of as complex, and complex entities must be preceded by simple entities.

15. Generic Characters (*jāti*) and Imposed Properties (*upādhi*) as Qualifiers (*viśeṣaṇa*)

It has been shown that everything of which we have a determinate knowledge is set off from other objects by some sort of distinguisher. The commonest term for this distinguisher is '*viśeṣaṇa*', which I shall translate as 'qualifier'.[43]

A qualificand may of course have many qualifiers. When we say 'the man is handsome' (*naro 'yam sundaraḥ*), both man-ness (*naratva*) and beauty (*saundarya*) are qualifiers of man. But every qualificand must have at least one qualifier. The qualifier that fulfills this minimum requirement will be the broadest qualifier of which the qualificand is capable. In a knowledge of man, no matter what other qualifiers man may have, he will always have the qualifier man-ness. Qualifiers that are of this basic sort may always be expressed by adding an abstract suffix (e.g., -ness) to the expression of the qualificand. These qualifiers are always either generic characters (*jāti*) or imposed properties (*upādhi*).

The difference between generic character and imposed property is based partly on the extent to which they distinguish the qualificand from other entities. The difference is important since the relation into which a generic character is traditionally said to enter differs from the relation entered into by an imposed property.

If my knowledge is 'It (is) a man', the qualifier of man in this knowledge is the generic character man-ness by which a member of the genus homo is recognized. This character appears in many individuals. It is said to inhere in all its loci, just as one quality may inhere in many substances. But if my knowledge, arising from the same situation, is 'It (is) Devadatta', the qualifier of Devadatta will be Devadatta-ness. This qualifier is an imposed property which belongs to nothing else in the world than the man Devadatta. It is said to reside in Devadatta not by the relation inherence but by a Particular Qualification Relation

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this (is) a pot'. Here knowledge (*jñāna*) qualifies the self (I), and this qualifier, knowledge, is in turn qualified by its content: 'this (is) a pot'. That the qualified qualifier is related to the self is apparent from the expression 'I know —'.

[43] I retain the traditional translation, 'qualifier', as being better English. 'Distinguisher', however, would be more literal. Occasionally 'limitor' (*avacchedaka*) is also used in this sense; cf. *B.N.*, 19, and *N.K.*, *s. v.* avacchinnatvam, 4. However, in view of the very different sense which 'limitor' usually has (cf. §§ 22 and following), it seems better not to burden the reader with this ambiguity.

(*viśeṣanatā-viśeṣa-sambandha*). The relation is a qualification relation because Devadatta-ness is known only through its being a qualifier of Devadatta. It is called a *particular* qualification relation because of the doctrine that each relation between an imposed property and its locus is particular, differing in nature from every other such relation. For the same reason, it is also called a Peculiar Relation (*svarūpa-sambandha*), i.e., a relation peculiar to the pair it connects. In what follows I shall abbreviate these terms (viz., *viśeṣanatā-viśeṣa-sambandha, svarūpa-sambandha*), when convenient, by 'P'.[44]

As man-ness is the character by which a member of a genus is recognized, Devadatta-ness is the character by which a member of what we should call a unit class is recognized. This second sort of character is always regarded by the Navya-naiyāyikas as an imposed property rather than as a generic character. A further rule requires that a qualifier be termed an imposed property if it is the qualifier of a generic character (or if it is expressed by the abstraction of an abstraction). For example, pot-ness-ness (*ghaṭatvatva*) is an imposed property qualifying the generic character pot-ness, which in turn qualifies pots.

There are other qualifiers besides the above sorts that are regularly termed imposed properties rather than generic characters. A qualifier is an imposed property if it is compound (*sakhaṇḍa*). By compound imposed property (*sakhaṇḍôpādhi*) is meant the character by which the product of two classes is recognized.[45] An example is beast-ness (*paśutva*),[46] since beast is defined as 'that which has hair and a tail'. The parts of beast-ness are hairy-ness and tailed-ness.[47]

[44] The distinction between inherence and P is entirely obliterated in Raghunātha's system; the distinction between generic character and imposed property is partly so. Cf. § 13.

[45] 'Compound imposed property' seems to have been used originally of properties belonging to entities of different categories; cf. *N.K.*, *s. v.* sakhaṇḍôpādhi. In this original sense *bhāvatva* (belonging to the first six categories), *kāraṇatva* (belonging to all seven), etc., were taken as compound. This, however, is not the usual sense of 'compound imposed property' in Navya-nyāya. *Bhāvatva*, for instance, is regularly termed an indivisible, not a compound, property (cf. *B.N.*, p. 8, lines 28–29; *P.T.N.*, p. 49). I cannot say when the term changed from the older sense to that given in the text above. *N.K.* is hopelessly confusing; e.g., *pratiyogitva* is termed compound *s. v.* akhaṇḍôpādhi but indivisible *s. v.* pratiyogitā; *abhāvatva* is compound *s. v.* sakhaṇḍôpādhi but indivisible *s. v.* abhāvatvam.

[46] Cf. *B.N.*, p. 8, lines 20–23.

[47] When a generic character or simple imposed property acts as a qualifier, it is itself unqualified unless it is actually expressed. Thus, in the knowledge 'This (is) a pot', the qualifier pot-ness is unqualified. But in the knowledge 'The pot (is) a locus of pot-ness', pot-ness is qualified by pot-ness-ness. Compound properties, however, are treated differently. Even when unexpressed they are qualified by their parts. For example, death-ness (*maraṇatva*— the property common to all cases of death) is defined as 'the cessation of inhalation and exhalation'. In the knowledge 'He (is) dead', the qualifier death is qualified by death-ness, which is unexpressed. But although unexpressed, it is in turn qualified by 'cessation of inhalation' and 'cessation of exhalation'. *B.N.*, p. 19, lines 12–17.

A qualifier is an imposed property if its loci are loci of loci of a generic character.[48] Such a qualifier is staff-holder-ness (*daṇḍitva*). The loci of staff-holder-ness are all persons who hold staffs. These persons are loci of staffs. Staffs are loci of the generic character staffness.[49]

16. *Sāmānya* (Class Character)

Some authors (e.g., Viśvanātha, *S.M.*, 8, 9) equate the term '*sāmānya*' with '*jāti*' (generic character). Others, among them Mathura, use '*sāmānya*' or '*sāmānya-dharma*' more broadly, almost as what one might call class character. They apply these terms not only to generic characters but to all imposed properties as well, other than the characters of unit classes.[50]

17. Qualificand (*viśeṣya*), Qualifier (*viśeṣaṇa*), and Chief Qualifier (*prakāra*)

A natural application of the term 'qualificand' (*viśeṣya*) is to refer to what is expressed by the subject of a sentence. In the knowledge '*bhūtale ghaṭaḥ*' 'on the ground (is) a pot', pot may be called the qualificand, while in the knowledge '*ghaṭavad bhūtalam*' 'pot-possessing (is) the ground', ground may be called the qualificand.[51]

The use of the terms 'qualificand' and 'qualifier' is most frequent where the entities expressed respectively by subject and predicate are connected by a relation other than contact or inherence. Thus in the knowledge 'A pot (is) not on the ground' '*bhūtale ghaṭo nâsti* or *bhūtale ghaṭâbhāvaḥ*', absence of pot is the qualificand, while in the knowledge 'The ground possess(es) absence of pot' '*ghaṭâbhāvavad bhūtalam*', ground is the qualificand.[52]

[48] I state this principle somewhat differently from the Nyāya sources, which speak simply of an indirect relation (*paramparayā*) in such cases. Cf. Āthalye *T.S.*, 92; *S.P.*, ed. Ghāte, note on Sect. 174; *S.P. Calc.*, *Padārthacandrikā*, 145.

[49] *Kiraṇâvalī* (*V.D.*, p. 33, lines 7–8) and *S.M.*, 8 list six impediments to generic character. The most important of these, viz., *vyakter abheda*, *anavasthiti*, *asambandha*, are covered by the above rules. The remaining impediments are: (i) *saṃkara*, cross-connection, whereby an entity cannot have the characters of two different genera unless the one genus includes the other; this is not generally recognized as an impediment by the New School (cf. *S.M. Dinakarīya*, p. 72, lines 7–8); (ii) *Rūpahāni*, contradiction by nature, an example of which is furnished by the *viśeṣāḥ*; since these are defined as ultimate differences, they can have no common generic character; (iii) *tulyatva*, equality, whereby *ghaṭatva* and *kalaśatva* cannot both be generic characters; both mean pot-ness.

[50] Cf. *S.P. Calc.*, which states (41) that *jāti* and *upādhi* are two varieties of *sāmānya*. So also *T.K.*, p. 20, line 12. Possibly '*sāmānya*' can be used of the characters of unit classes (e.g., this-house-ness) as well, but Mathura seems to feel that this usage is unnatural; cf. his gloss *V.P.R.*, 42, 6–7. Often it is simplest to translate '*sāmānya*' as 'the whole of'; thus *V.P.R.*, 41.6, '*sādhya-sāmānyīya* — to the whole of the *sādhya*'.

[51] Āthalye, p. 227; Sen, p. 35, is in error.

[52] The reason that the expressions 'qualificand' and 'qualifier' are used more frequently in these cases is that Nyāya epistemology can explain such a knowledge as 'The pot (is) not

Where a qualificand has two qualifiers, one expressed in the subject and one in the predicate, that expressed in the predicate is distinguished as the *prakāra* or chief qualifier. Thus in the knowledge 'The tall man (is) handsome', height is simply a qualifier (*viśeṣaṇa*), but beauty is the chief qualifier (*prakāra*). Where a qualificand has only one qualifier, as in 'This (is) a man' (qualifier = man-ness), the terms 'qualifier' and 'chief qualifier' are interchangeable. Naturally the qualifier or chief qualifier may in turn have other qualifiers.

A further use of the term 'chief qualifier' (*prakāra*) is in the analysis of knowledges. In the knowledge 'pot-possessing (is) the ground' pot may be called the chief qualifier *of the knowledge* 'pot-possessing (is) the ground' as well as the chief qualifier of ground.[53]

It must be borne in mind that qualificand and qualifier refer not to words but to entities. Thus, in regard to the knowledge 'The man (is) handsome' one may say that man is qualified by beauty (*naraḥ saundarya-viśiṣṭaḥ*) or one may say that man is qualified by the word 'handsome' (*naraḥ sundara-pada-viśiṣṭaḥ*). One cannot say that man is qualified by handsome. Again, the knowledge 'This (is) a pot' '*ayaṃ ghaṭaḥ*' is analyzed as a knowledge where the qualificand is pot and the chief qualifier is pot-ness. 'This' is an expression applied to the qualificand; it is not the qualificand itself.

18. Superstratum (*ādheya*) and Locus (*adhikaraṇa*), Substratum (*ādhāra*), or Abode (*āśraya*)

When two entities are related, one may often conceive of the one as superimposed on the other. The relations of contact (C), inherence (H), and particular qualification (P) offer obvious examples. The fire is superimposed on the mountain by C; it is superimposed on its atoms by H. Devadatta-ness is superimposed on Devadatta by P. The element that is superimposed is called the superstratum (*ādheya*); the element on which it rests is called the locus (*adhikaraṇa*). Other terms for locus are 'substratum' (*ādhāra*) and 'abode' or 'receptacle' (*āśraya*). In the examples above, fire and Devadatta-ness are superstrata; the mountain, the atoms and Devadatta are loci. The locus may be said to 'possess' the superstratum (*ghaṭavad bhūtalam*).[54] The superstratum may be said to occur or reside or be in the locus (*bhūtale ghaṭo vartate, bhūtale ghaṭas tiṣṭhati, bhūtale ghaṭaḥ*).

on the ground' only by the absence's nature of being a qualificand of that (the ground) with which a sense (the eye) is in contact. In such a knowledge as 'The pot (is) on the ground' there is a grammatical use but no epistemological use for the terms 'qualificand' and 'qualifier.'

[53] For a more exact distinction between the two meanings of *prakāra*, see § 20.

[54] In one passage of the *V.P.R.* Mathura makes a distinction between '*x-vat*' and '*x-adhikaraṇa*', but the distinction is purely verbal; cf. note on *V.P.R.*, 94.10–95.2. Other possessive suffixes, such as *-in*, are also used to express relations (e.g., *kapi-saṃyogi*, *daṇḍi*, etc.).

19. Adjunct (*pratiyogi*) and Subjunct (*anuyogi*)

All relations (*sambandha*) in Nyāya are conceived as subsisting between two terms.[55] One of these terms is the adjunct (*pratiyogi*) [56] of the relation, the other is the subjunct (*anuyogi*). Wherever the relation is such that one term may be said to occur in or on the other, i.e., to use the technical Nyāya phrase, in all occurrence-exacting (*vṛtti-niyāmaka*) [57] relations, it is the superstratum (unless this is an absence) that is termed the adjunct of the relation and the substratum that is termed the subjunct. The relations H and P are always occurrence-exacting. Contact is sometimes occurrence-exacting, but sometimes not, as for example the contact between the two hands held vertically palms together.[58]

In non occurrence-exacting cases of contact and in all relations which are never occurrence-exacting (e.g., the relation father of), it is the qualificand that is termed the adjunct of the relation and the qualifier that is termed the subjunct. Thus, if I say "my right hand is in contact with my left," my right hand is the adjunct. If I say "Devadatta is related to Indradatta by the relation father of (*sva-sunutā-sambandha* [59])," Devadatta is the adjunct.

Notice that in many cases 'adjunct' and 'superstratum' may both be used to refer to the same entity in the same knowledge, as to pot in 'the ground possess(es) a pot'. Yet the concept of an adjunct is quite different from the concept of a superstratum. An adjunct is an adjunct *of a relation*. A superstratum is a superstratum *of a substratum*.

20. Relational Abstracts. Theory of Describers

Western logic distinguishes names from descriptions. A name, for example 'Calcutta', denotes an entity without reference to anything else, whereas a description, for example 'the capital of Bengal', denotes something only by relating that something to something else. 'Calcutta' refers to only one entity; 'the capital of Bengal' refers to three entities — Bengal, the relation capital of, and a third entity denoted by the description 'the capital of Bengal'.

Since Sanskrit makes no syntactical distinction between definite and indefinite expressions, it seems reasonable when dealing with Sanskrit logic to include in our category of names such indefinite expressions as 'mountain' (*parvataḥ*) as well as definite ones (ones denoting unique objects) like 'Calcutta'. In opposi-

[55] We shall see later (§ 43) that Nyāya analyzes relations of more than two terms into a series of relations each of which has two.

[56] '*Pratiyogi*' has another meaning in Nyāya, viz., 'counterpositive', which will be discussed in § 28 below.

[57] A more precise definition of occurrence-exacting will be given in § 44.

[58] *B.N.*, p. 10, bottom.

[59] For the peculiarity of terminology, cf. § 55 below.

tion to the name 'mountain', we may term 'locus of fire' (*vahny-adhikaraṇa*) a description. This description refers to three entities — fire, the relation locus of, and a third entity denoted by the description 'locus of fire'. Notice that the words 'capital' and 'locus' are fragments of descriptions; by themselves they denote nothing.

The above distinction deals only with words. Navya-nyāya, in keeping with its thoroughgoing realism, attempts to deal directly with the objects themselves.

As an entity serves in different capacities or, as a Westerner would consider them, different relations, Navya-nyāya supposes various properties (*dharma*) to become apparent (*bhāsate, bhāti*) in it. When John is a father, one may speak of John's fatherhood (*pitṛtā*). If one considers John as the son of William, one may speak of John's sonship (*sunutā*). Since these properties may always be expressed in Sanskrit by the addition of the abstract suffix *-tā* or *-tva* to the expression of the capacity or relation in question, let us limit ourselves in translating to one English suffix only. A convenient suffix is '-ness' which we may indicate simply by a subscript 1, e.g., 'father-ness' or 'father$_1$'. A double abstraction may be indicated by a subscript 2, e.g., 'father-ness-ness' or 'father$_2$'.[60]

Residing by P in every superstratum is a superstratum$_1$, in every substratum a substratum$_1$; likewise adjunct$_1$, subjunct$_1$, *sādhya*$_1$, *hetu*$_1$, *pakṣa*$_1$, qualificand$_1$, qualifier$_1$, chief qualifier$_1$, reside by P in every adjunct, subjunct, *sādhya*, etc.

An abstract property the name of which is formed somewhat differently from the above is occurrent$_1$ (*vṛttitva*). Where one entity (e.g., fire) occurs in or on another entity (e.g., atoms of fire), one may speak of occurrence (*vṛtti*) of the first in the second. The first entity may be called the occurrer or the occurrent (*vṛttin*), and one may speak of an abstract property occurrent$_1$ (*vṛttitva*) residing in the occurrent.[61]

All these properties, father$_1$, locus$_1$, occurrent,$_1$ etc., are in effect relational abstracts.[62] They are abstracts of those relations the expressions of which, we

[60] This symbolism has already been used by Sen.

[61] This is the way in which the term '*vṛttitva*' was originally formed by the Naiyāyikas. Mathura objects to this analysis when '*vṛttitva*' occurs at the end of a negative compound. For his argument cf. *V.P.R.*, 14.5 ff and notes.

[62] The nature of these properties formed the subject of considerable discussion in Navya-nyāya. To judge from *N.K.*, tradition seems to have confused these properties with the imposed properties of § 15. *N.K.*, *s. v.* pratiyogitā, p. 535, line 13, "*akhaṇḍo dharma-viśeṣaḥ pratiyogitā iti sampradāyaḥ*"; *s. v.* ādhāratā "*ayaṃ câhaṇḍôpādhiḥ.*" On the other hand, Raghunātha and his followers seem to have recognized their relational nature. *N.K.*, *s. v.* pratiyogitā, p. 534, lines 17–18, "*tac ca svarūpa-sambandha-viśeṣaḥ*" quoting *Dīdhiti*. Cf. also *s. v.* adhikaraṇatā, nirupakatā. Several of these properties are called *viṣayatā-viśeṣa* — types of content$_1$ (*s. v.* sādhyatā; *s. v.* viśeṣaṇam, p. 787, last line). Content$_1$ is the peculiarity attaching to an entity in virtue of its forming the content of a knowledge. Content$_1$ may itself be analyzed as a type of P relation (*svarūpa-sambandha-viśeṣa*; cf. *s. v.* viṣayaḥ).

have seen, form fragments of descriptions. We have said that 'locus' by itself denotes nothing, but the Naiyāyika approaches the problem differently; 'locus-ness' to him denotes an entity just as much as 'pot' does; the difference is that the entity locus-ness is vague and dependent in a way that pot is not.

Where

(1) A mountain is a locus of fire

the Naiyāyika may analyze the situation by saying

(2) The $locus_1$ resident in mountain is described (*nirūpita*) by fire; [63] he may also say that the $locus_1$ is described by fire-*ness* (*vahnitva-nirūpita*).[64] Fire or fire-ness may here be called the describer (*nirūpaka*) of the $locus_1$ in mountain.

The essential difference between a Western description and a Navya-nyāya describer is that the first refers to an expression and the second to an entity. But we shall want a more exact definition of what the Naiyāyika means by 'is described by'. Maheśa Chandra (*B.N.*, pp. 13–14) offers two glosses, 'is qualified and rendered definite by' (*viśeṣato 'vadharyate*) and 'is dependent on' (*āpekṣate*).

Pure $locus_1$ is almost as vague a thing as what we refer to simply as '-ness', but $locus_1$ described by fire is as definite as man-ness or horse-ness. It is a class character (*sāmānya*) whose manifestations (*vyakti*) occur in mountain, hearth, etc., just as the manifestations of man-ness occur in Devadatta and you and me. Again, the $locus_1$ in any entity is dependent, for $locus_1$ cannot occur alone in a knowledge.

We may now express more exactly the distinction between a superstratum and an adjunct noticed at the end of the last subsection. $Superstratum_1$ is always described by a substratum, whereas $adjunct_1$[65] is described by a relation.

We may also distinguish between the two meanings of 'chief qualifier' (*prakāra*) noticed in § 17. In the knowledge 'pot-possessing (is) the ground' there is in pot a chief $qualifier_1$ (*prakāratā*) described by ground; there is also in pot a chief $qualifier_1$ described by the knowledge 'pot-possessing (is) the ground'.

The meaning 'dependent on' which 'described' has even in such contexts as (2) above, allows us to use it in quite different contexts. For example, (1) may also be analyzed by saying

(3) The $locus_1$ in mountain is described by the $superstratum_1$ in fire,[66]

[63] *parvata-niṣṭhâdhikaraṇatā sā vahni-nirūpitā.*

[64] Cf. Sen, p. 28. The abstract is used in place of the simplex generally, if not always, in order to resume several instances. For example, where mountain, hearth, and crossroads are each a locus of a different fire, the $locus_1$ of all three would be said to be described by fire-*ness* rather than by *a fire*.

[65] At least, $adjunct_1$ of the sort so far discussed. For absential $adjunct_1$ see below, § 28.

[66] *parvata-niṣṭhâdhikaraṇatā sā vahni-niṣṭhâdheyatā-nirūpitā.*

for wherever a $locus_1$ appears in a knowledge a $superstratum_1$ is implied. These properties are mutually dependent (*sāpekṣa-dharmau, nirūpya-nirūpaka-bhāvau*). The situation expressed by (1) could be equally well expressed by saying 'Fire is a superstratum of mountain', which would be analyzed as

(4) The $superstratum_1$ in fire is described by the $locus_1$ in mountain.

Most properties that abstract the relation between two terms have a companion abstract with which they are mutually dependent.[67] Examples of these mutually dependent pairs of properties are $qualificand_1$ and chief $qualifier_1$,[68] $cause_1$ and $result_1$,[69] $knowledge_1$ (*viṣayitā*) and $content_1$ (*viṣayatā*).[70] Notice that 'described by' expresses a reversible relation only when it is used between two relational abstracts. Thus, one cannot reverse (2) and say that fire or fireness is described by the $locus_1$ in mountain.

21. Navya-nyāya's Difficulty in Explaining Abstract and Imposed Properties

Before proceeding further it is worth noticing that the Navya-naiyāyikas have been much troubled by their abstract and imposed properties, and they generally recognize the heaviness (*gaurava*) of the traditional theory explaining them. Heaviness, in the technical language, means the assuming of several hypotheses where fewer would fit the case, or the statement of a law in terms of variables when it can be stated in terms of the same number of constants. We have explained the Nyāya properties in Western terms as relational abstracts, characters of unit classes, etc. Where do such entities fit into the system of seven categories? The traditional Nyāya theory is that each of these properties, although not identical with its locus, belongs to that category to which its locus belongs.[71] This explanation is heavy in the strict sense. The only way out of the difficulty seems to be to follow Raghunātha and give up the traditional system of categories.

22. Resident Limitors and Describer-Limitors. Difference Between Navya-nyāya and Western Concepts

The most distinctive and perhaps the most important technical terms in Navya-nyāya are 'limited' (*avacchinna*) and 'limitor' (*avacchedaka*). These expressions have many shades of meaning, most of which are foreign to the concepts of Western logic.

[67] The exceptions, as will be noticed later, are where the second term is bound to the first. An example is the property counterpositive-ness which abstracts the relation between x and $\sim x$.

[68] *N.K.*, *s. v.* viśeṣyaḥ.

[69] *B.N.*, p. 14.

[70] *N.K.*, *s. v.* viṣayi, nirūpakatvam.

[71] I owe this information to MM. Śrī Kālīpada Tarkāchārya.

The basic use of the word limited is in connection with relational abstracts. Where other entities are said to be qualified by a qualifier, a relational abstract is said to be limited by a limitor. For example, in the knowledge '[The] mountain possess(es) fire', mountain is the qualificand and is qualified by mountain-ness and fire, fire is the chief qualifier and is itself qualified by fire-ness. Accordingly, one may say that in this knowledge

(1) the qualificand$_1$ resident in mountain is a qualificand$_1$ limited by mountain$_1$ and described by fire, and the chief qualifier$_1$ resident in fire is a chief qualifier$_1$ limited by fire$_1$ and described by mountain.[72]

Again, one may speak of

(2) an inference in which the *sādhya*$_1$ is limited by fire$_1$.[73]

Such an expression distinguishes the relational abstract, *sādhya*$_1$, in the inference of which one is speaking just as the expression 'a substance qualified by fire$_1$' distinguishes the substance of which one is speaking.

The relational abstracts of (1) and (2) are limited by the qualifiers of the entities in which they reside. Technically these abstracts are said to be limited through a relation of residency (*niṣṭhatva-sambandhenâvacchinna*; cf. Śiv. Miśra, 22.8). I shall refer to limitors of the type of mountain$_1$ and fire$_1$ in (1) and (2) simply as 'resident limitors'.

One may always paraphrase such an expression as (2) as follows:

(3) An inference where the *sādhya* is fire qualified by fire-ness.

The limited abstracts in (1) and (2) are specific manifestations (*vyakti*) of relational abstracts. The qualificand$_1$ to[74] fire that is limited by mountain$_1$, for instance, is only one manifestation of qualificand$_1$ to fire. Other manifestations of this abstract, ones limited by hearth$_1$ etc., will appear in other knowledges. The following is an example of how a relational abstract in its generic form may be limited.

Since only a potter's stick can make a pot, one may say that all instrumental causes of pots are qualified by stick-ness. The normal way of stating this, however, is:

(4) Stick$_1$ is the limitor of instrumental cause$_1$ described by pot.[75]

This is a general statement, not one made with reference only to a particular knowledge or situation. Here stick$_1$ limits not one or another specific manifesta-

[72] *Vahnimān parvata ity atra parvata-niṣṭha-viśeṣyatā sā vahni-nirūpita-parvatatvâvacchinna-viśeṣyatā, vahni-niṣṭha-prakāratā ca sā parvata-nirūpita-vahnitvâvacchinna-prakāratā.*

[73] *Vahnitvâvacchinna-sādhyatākânumiti.*

[74] Here and in what follows, where there is no danger of ambiguity, I use 'to' as an abbreviation for 'described by'. For a similar abbreviation used in Sanskrit, cf. § 58.

[75] *Daṇḍatvaṃ ghaṭa-nirūpita-nimitta-kāraṇatâvacchedakam.* Cf. *N.K.*, *s. v.* avacchedakatvam, line 16.

tion of instrumental $cause_1$ to pot; it limits instrumental $cause_1$ to pot in its generic form.

The Navya-nyāya definition of limitor in such contexts as (4) is peculiar. The limitor is said to be exactly concurrent with (*anatirikta-vṛtti*) the entity limited, or more precisely, is said to reside in no locus more than and no locus less than (*anyūnânatirikta-vṛtti*) the entity limited.[76] In the face of this definition it seems difficult to admit the truth of (4). The generic character $stick_1$ resides in sticks in the forest, yet these sticks do not make pots. In answer the *Naiyāyika* says that these sticks, since they have the ability (*yogyatva*) to make pots, do have residing in them the abstract property $cause_1$ described by pot. But still, one might say, a crooked stick has not even the ability to make pots. The Naiyāyika would answer: That is true, but it lacks the ability not in virtue of its being a stick but in virtue of its being crooked. Every entity in so far as it is a stick has residing in it $cause_1$ to pot.

One may generalize from this example and say that any entity if qualified simply by its generic character or peculiar property has residing in it abstractions of all the relations into which all particulars of that entity enter. Fire qualified simply by fire-ness has residing in it $occurrent_1$ to mountain, $occurrent_1$ to hearth, *sādhya*$_1$ to smoke, etc. To this peculiarity of Navya-nyāya is due the fact that no one method can be followed for reducing expressions employing 'limited' to the terms of Western logic. Western logic would express the facts referred to by (1) as:

(5) 'For all x, if x is the qualificand in the knowledge 'A mountain possess(es) fire', x is some mountain or other'.

It would express the facts referred to by (4) as:

(6) 'For all x, if x is a pot, x is caused by some stick or other'.

Western logic would not allow the implications of (5) and (6) to be reversed. Thus, it would not allow:

(7) 'For all x, if x is a stick, x causes some pot or other'.

But there are Nyāya expressions exactly parallel to (4) where Western logic would allow the implication to be reversed. For example:

Every substance is in contact with something and every contact has as its inherent cause (that by inhering in which it comes about) a substance. Accordingly, it is said that

(8) $Substance_1$ is the limitor of inherent $cause_1$ described by contact.[77]

Although (8) is exactly parallel to (4), in reducing (8) to the terms of Western logic one must show that the implication is reversible, thus:

[76] *N.K.*, *s. v.* avacchedakatvam. Cf. also *R. Jāg.*, p. 260, line 6, although the definition there is specifically of limitor of counterpositive-ness.

[77] Cf. *S.M.* on *BhP.*, 3.

(9) For all x, if x is a contact, x is caused by some substance or other, and for all y, if y is a substance, y causes some contact or other.

Paraphrases like (5), (6), and (9) are sometimes useful, but must be handled with great care, for they employ concepts basically different from those of (1), (4), and (8). The universal statements of Aristotelian or mathematical logic are quantified statements, that is, they are statements about *all* entities (individuals, classes, or statements) of a given sort. On the other hand, Navya-nyāya regularly expresses its universal statements and knowledges not by quantification [78] but by means of abstract properties. A statement about cause_1 to pot differs in meaning from a statement about all causes of pots just as 'man-ness' differs in meaning from 'all men'.

Locus_1 to fire in the knowledge 'Fire is on the mountain' is limited by the resident limitor mountain_1, but one cannot say locus_1 to fire is always so limited. Locus_1 to fire may be manifested in a hearth, or a crossroads, etc. The abstraction of all these various manifestations is called 'generic locus_1 described by fire' (*vahni-nirūpitâdhikaraṇatva-sāmānyam* [79]) and this may be said to be limited either by fire or by fire-ness.

In the same way, generic occurrent_1 to mountain is the abstraction of manifestations occurring in fire, trees, rocks, and everything that occurs on a mountain. It is limited by mountain or mountain_1.[80] The limitors mountain and mountain_1 here and the limitor fire_1 above are not resident limitors [81] and they are not exactly concurrent with the entities limited. They always appear with the limited entities but in different places. The abstracts here limited are technically said to be limited through a relation of described-ness (*nirūpitatva-sambandhenâvacchinna*, Śiv. Miśra, 24.13). I shall refer briefly to such limitors as mountain, mountain_1 and fire_1 above as describer limitors.

23. Limiting Relations

A relational abstract such as superstratum_1 covers a number of more specific relations. Thus, a superstratum_1 limited by pot_1 resides in pot when

(1) a pot is in contact with ground

and when

(2) a pot inheres in its halves.

Just as the superstratum_1 in pot is distinguished from the superstratum_1 in cloth or stick by calling it a superstratum_1 limited by pot_1, so the superstratum_1 in x

[78] Of the five definitions of the *Vyāpti-pañcaka*, only the Fourth uses the word 'all' (*sakala*).

[79] For a similar example, cf. *V.P.R.*, 82.1–6.

[80] For a similar example, cf. Śiv. Miśra, 24.11 ff.

[81] However, fire in the above example may be considered a resident limitor, since fire qualifies mountain in the knowledge 'A mountain possess(es) fire'.

when x is in contact may be distinguished from the superstratum$_1$ in x as x enters other relations by terming the first a superstratum$_1$ limited by contact. As a general principle:

> A relational abstract residing in an entity may always be termed limited by the specific relation in which that entity, as a locus of the said abstract, occurs.

For example, with reference to (1) we may say

> (3) there resides in pot a superstratum$_1$ limited by contact and by pot$_1$.

Limiting relations are very important in the expression of pervasions and inferences. For example

> (4) 'The mountain possess(es) fire because [it possess(es)] smoke'

is an ambiguous expression of an inference where smoke is *h* and fire is *s*. If by 'it possess(es) smoke' we mean 'it possess(es) smoke by inherence', the inference will be false, for smoke resides by inherence only in atoms of smoke, and these are not loci of fire. The inference will be correct only if by 'it possess(es) smoke' we mean 'it possess(es) smoke by contact'. The valid inference may be distinguished from the false one by stating precisely that the *hetu*$_1$ in smoke is limited by contact.[82] In the same way, the *sādhya*$_1$ in fire, if (4) is to be valid, must be limited by contact.

Since a relation is said to reside (*tiṣṭhati*) in both its terms,[83] a rational view would be that a limiting relation is both a resident and a describer limitor. However, the Naiyāyikas seem to have regarded limiting relations as *sui generis*. The word 'limitor' (*avacchedaka*) is regularly taken to refer only to a non-relational limitor; limiting relations can be referred to only as 'limiting relations' (*avacchedaka-sambandha*). Thus, when one wishes to say that x is limited by all the entities that limit y, one must say 'x has the limitor(s) and the limiting relation(s) of y'.

Some modern authors claim that locus$_1$ and similar properties can have no limiting relation, for a locus is not said to be related to anything by such specific relations as contact, inherence, particular qualification, etc.; rather, something is said to be related to it.[84] However, the regular practice of Mathura is to allow a limiting relation to a locus$_1$ as to any other abstract property. That this

[82] '*Vahnimān dhumād ity atra dhūma-niṣṭha-hetutāyāḥ saṃyoga-sambandhâvacchinnatvam*'. This truth may also be expressed by saying 'smoke is pervaded by fire by a relation of contact only' (*dhūmaḥ saṃyoga-sambandhenâiva vahni-vyāpyaḥ*).

[83] *B.N.*, p. 13, line 8.

[84] Cf. *B.N.*, p. 19, lines 4–7, and *N.K.*, *s. v.* viṣayaḥ. Among similar properties are reckoned *pakṣa*$_1$, subjunct$_1$, and sometimes qualificand$_1$. An example of the last is the qualificand$_1$ resident in man in the knowledge 'The man (is) handsome'. The reason is that the man in this knowledge is a locus of beauty. Beauty occurs in the man by inherence, but the man does not occur.

practice is consistent with the general principles of limitation will appear from the following consideration. Of the two knowledges:

(5) 'The pot inhere(s) in its halves',

(6) 'The pot (is) in contact with its halves',

the first is valid and the second false, yet in both cases the $locus_1$ in the pot-halves is limited by pot-half-ness and described by pot. There must be something further to distinguish the $locus_1$ in these two knowledges. Mathura would say that the $locus_1$ in the pot-halves in (5) is limited by inherence, whereas the $locus_1$ in the pot-halves in (6) is not.[85]

Thus, in Mathura's practice, any mutually dependent pair of $locus_1$ /$occurrent_1$ or $locus_1$/$superstratum_1$ has one and the same limiting relation.

24. Limitors of $Limitor_1$ (*avacchedakatâvacchedaka*)

One may conceive of an abstract $limitor_1$, similar in its nature to the other relational abstracts we have considered. When such $limitor_1$ appears in an entity, it (the $limitor_1$) will also be limited.

A $limitor_1$ x will be limited by the generic character or imposed property qualifying the limitor y in which x resides; x will also be limited by the relation in which y stands to the entity that y limits. For example, in the inference '[It] possess(es) fire because [it possess(es)] smoke', the limitor of the $sādhya_1$ in fire is $fire_1$, and there resides in this $fire_1$ a $limitor_1$, itself limited by $fire_2$ and inherence.

25. Knowledge of an Entity in a Double Capacity

A type of knowledge of which we have not yet considered an instance is that in which more than one capacity of an entity is considered at one time. In analyzing the inference 'The mountain possess(es) fire because [it possess(es)] smoke', suppose that for 'smoke' we substitute the description 'the *hetu* in the knowledge 'the mountain possess(es) fire because it possess(es) smoke' ', which we may abbreviate for the rest of this subsection to 'the *hetu*'. We may then say:

(1) There is an $occurrent_1$ described by mountain resident in the *hetu*.

But how is this $occurrent_1$ limited? We cannot speak of the *hetu* being qualified by $hetu_1$ as we speak of smoke being qualified by $smoke_1$. If we are to speak of qualifiers here we must speak of the qualifiers *of the entity which is* the *hetu*. In other words, (1) does not really predicate one property, viz.,

[85] The relation between a pot and the pot-halves (*kapālau*) is a favorite Nyāya example of inherence. The process by which an Indian potter makes his pots is to make the halves first, then seal them together. Cf. Foucher, p. 103.

One is tempted at first sight to say that the $locus_1$ in the pot-halves in (5) is limited by the relation of being inhered in, but note that the knowledge expressed by (5), whatever it may imply, does not actually contain such a relation as being inhered in.

occurrent$_1$ to mountain, of one entity, ***hetu***. Rather, it predicates two properties of one entity. It says that an entity x such that x possesses the property of being the ***hetu*** also possesses the property of occurrent$_1$ to mountain. There is a close connection between these two properties. The second is considered only in so far as the first is considered. The way the Naiyāyika expresses this is to say that the second property is limited by everything that limits the first. Thus, in place of (1) we may say:

(2) There is an occurrent$_1$ described by mountain, this occurrent$_1$ being limited by the limitor and the limiting relation of the ***hetu***$_1$.

In the texts which follow, expressions of such double capacities are very common, but it so happens that they occur only in connection with negatives. Actual examples can be quoted when we take up the subject of negation.

26. Words for Existence: *sattā, bhāva*

General. European philosophy was long bedevilled with the ambiguity of words such as 'is' and 'exist'. In normal usage the same word may be used in an existential sense, e.g., 'God is', and in a copular or predicational sense, e.g., 'A mermaid is half woman, half fish' or 'Mermaids are mythological beings'.

The existential problem also arises in Indian philosophy, but in so mild a form that it was long before the Indians recognized it. The reason that the problem is less serious in Indian philosophy is that Sanskrit normally dispenses with the copula. One cannot infer 'God exists' from 'God . . . perfect'. However, a difficulty arises even in Sanskrit when it comes to such expressions as 'There is an absence of fire in a lake'. The conservatives of the Navya-nyāya seem to have been unaware of this difficulty. Raghunātha saw it; his solution is similar to that of Kant.

The conservative Navya-naiyāyikas purport to distinguish between *sattā* and *bhāva*.

'*Sattā*'[86] means existence or reality. It is traditionally defined as a generic character, the broadest of all such characters since it inheres in all members of the first three categories, viz., substances, qualities, and actions.[87] Broad as it is, however, there are many things one can talk about that do not 'exist' or are not 'real' in this terminology. Among them are the generic characters themselves, in fact, all the last four categories.

'*Bhāva*',[88] on the other hand, might best be translated presence, its contra-

[86] Etymologically, '*sat*' means 'that which is (*das Seiende*) or 'being' (the adjective, i.e., *seiend*). '*Sattā*' is the abstract noun formed from this and means etymologically 'Being' (the abstract noun, i.e., *das Sein*).

[87] *Bh.P.*, 8.

[88] Etymologically, the adjective '*bhāva*' means 'becoming' (*werdend*), the noun '*bhāva*' (the word referred to in the text) is the abstract formed from this and means 'Becoming' (the noun, i.e., *das Werden*, or to be barbarously literal, *das Werdendsein*).

dictory, *'abhāva'*, absence. Thus a Naiyāyika may speak of the presence of the generic character man-ness in men and the absence of this generic character in horses.

The definitions of *bhāva* among the conservative Naiyāyikas are useless. *Bhāva*-ness is said to be common to all the first six categories and *abhāva*-ness common to everything else (*S.M.*, 12).

One may point out other faults of the conservatives in this area. In the first place, it is hard to see what purpose is served by so artificial an abstract as *sattā* defined as above. But *'sattā'* becomes worse than useless when it is used in a meaning incompatible with its definition, and it frequently is so used. A typical example is *V.P.R.*, 96.8: ". . . *vahny-abhāvâdi-sattvena.*" This does not mean, 'because of the existence of such [things] as absence of fire on a . . .', for an absence does not exist and is not a member of one of the first three categories; it means, rather, 'because such [things] as locus of absence of fire may be truly predicated of . . .'.

Raghunātha claims that there is no distinction between *sattā* and *bhāva*. The words *'sattā'* and *'bhāva'* refer to the same thing, an indivisible imposed property which belongs to any entity so long as that entity enters into a relation: "*ghaṭâdau sad-vyavahāraś ca vartamānatva-nibandhanaḥ* — and whether or not we say a pot etc. is [something] depends on whether or not the pot etc. occurs [somewhere]" (*P.T.N.*, pp. 48–49).

This restriction of the existential is similar to Kant's statement that 'exists' is not a predicate.[89] To both philosophers 'God exists' would have been meaningless; 'God is everywhere', whether they affirmed or denied, both would have regarded as meaningful.

27. Two Types of Absence

Navya-nyāya divides absences into two main types — mutual absences (*anyonyâbhāva*) and relational absences (*saṃsargâbhāva*).

Mutual absences are denials of identity. An example of a mutual absence is: 'fire possess(es) [or (is) a locus of] mutual absence of water' (*vahnir jalânyonyâbhāvavān* or *vahnau jalânyonyâbhāvaḥ*). This may also be expressed: 'fire (is) different from water' (*vahnir jala-bhedavān* or *vahnir jala-bhinnaḥ*). I shall use the sign '$\dot{-}$' to symbolize mutual absence. Thus, the above knowledge may be represented:

(1) '(There is) $\dot{-}$ water in fire'.

Relational absences are denials of relations other than that of identity. Relational absences are said to be of three sorts: prior absence (*prāg-abhāva*), the absence of a thing somewhere, before it is created; posterior absence (*dhvaṃsâbhāva*), the absence of a thing somewhere, after it has been destroyed; and

[89] Cf. Quine, p. 151.

constant absence (*atyantâbhāva*), the absence of a thing somewhere, when this absence is not limited to a portion of time. Only the last of these three terms, viz., 'constant absence', is used in the texts here printed.

An example of a constant (relational) absence is: 'A lake possess(es) [or (is) a locus of] constant absence of fire (*hrado vahny-atyantâbhāvavān* or *hrade vahny-atyantâbhāvaḥ*). I shall use the minus sign '—' to symbolize constant (relational) absence. Thus, the above knowledge may be represented:

(2) '(There is) — fire in a lake'.

In giving Western examples, where the distinction of mutual and relational absence is made in the expression of the relation rather than of the negative, I shall follow the usual practice of using the tilde '∼' to symbolize the negative. In Western symbols, the statements corresponding to the above examples would be:

(1*a*) '∼ (fire = water)',

(2*a*) '∼ (fire R′ lake)',

where 'R″ represents a relation other than identity.

The Naiyāyika does not make a distinction between negating a term and negating a statement or formula. To him all absences are single terms, for they can all be expressed by single compound words. Yet neither of his types of absence is what mathematical logic would call the negate of a term, for each absence contains within itself the idea of a relation. Thus '∸ water' corresponds to the fragment '∼ (··· = water)'; '— fire' corresponds to the fragment '∼ (fire R′ ···)'.

28. Counterpositive (*abhāvīya-pratiyogi*). Counterpositive-ness (*pratiyogitā*). Limitors and Describer of Counterpositive-ness.

We have seen that in the knowledge 'Fire (is) on [the] mountain', fire may be called the adjunct (*pratiyogi*) and mountain the subjunct (*anuyogi*) of a relation, namely contact (§ 19). The same terms may be used of a negative knowledge, but in the following way. In the knowledge '(There is) constant absence of fire in a lake', fire may be called the adjunct (*pratiyogi*) and lake the subjunct (*anuyogi*) *of an absence*, namely constant absence of fire. Literally, the name for such an adjunct is 'absential adjunct' (*abhāvīya-pratiyogi*), but since this is apt to be confused with the other type,[90] I shall regularly call it 'counterpositive'. Thus, any entity which is negated by absence x is a counterpositive of absence x.

In every counterpositive there resides a counterpositive-ness (*pratiyogitā*). Now it is obvious that counterpositive$_1$ is a relational abstract just as much as

[90] In their writings the Naiyāyikas seldom bother to distinguish absential adjunct from relational adjunct (*saṃsarga-pratiyogi*), calling either simply '*pratiyogi*' and leaving it to be inferred from context which is meant.

sādhya$_1$, occurrent$_1$, locus$_1$, etc. But it differs from these in that one of the two terms it abstracts is bound to the other. Occurrent$_1$ abstracts a relation between x and y, but counterpositive$_1$ abstracts a relation between x and absence of x. Counterpositive$_1$ varies only as the qualifier and the relation of the entity in which it resides vary. In other words, counterpositive$_1$, whether to a specific absence (absence of this fire) or to a generic absence (absence of fire in general), is limited by a resident limitor. In this respect counterpositive$_1$ is always treated as the two examples of cause$_1$ which we gave in § 22. Counterpositive$_1$ to absence of this fire in a lake is limited by this-fire$_1$ and contact;[91] counterpositive$_1$ to generic absence of fire in a lake is limited by fire$_1$ and contact only.

An absence the counterpositive$_1$ to which is limited by a generic character or by a property common to several entities is termed a generic absence (*sāmānyâbhāva*) as opposed to a specific absence (*viśeṣâbhāva*). Notice that *generic absences have the effect of negating all particulars of a given class.* Thus,

(1) 'A lake (is) a locus of constant absence of fire to which the counterpositive$_1$ is limited by fire$_1$ and contact'[92]

refers to the same facts as

(2) 'For all x, if x is a fire x is not in contact with a lake'.

However, (1) does not actually mean (2), for it expresses the facts by means of abstract properties rather than by quantification. Compare remarks in § 22.

Counterpositive$_1$ is described by its absence.[93] In this case 'is described by' does not express a reversible relation, for absence is not a relational abstract (cf. § 20).

When one wishes to specify with reference to a number of negations that the counterpositive$_1$ to no one of these is described by a mutual absence, one may speak of counterpositive$_1$ described by constant absence-ness.[94] *Mutatis mutandis,* one may speak of counterpositive$_1$ described by mutual absence-ness.[95] Here also 'is described by' does not express a reversible relation.

Some particulars concerning the expression of limitors of counterpositive$_1$ deserve notice:

(A) where a fragment of a description is negated.

[91] When we say 'This fire is absent in a lake', we are normally denying its being in contact with a lake. The limiting relation of a counterpositive$_1$ must be expressed in all logical discourse, for there is no absence the counterpositive of which can be considered in all relations. There will always be some relation (contemporaneity, indirect contact, etc.) by which the counterpositive will be present rather than absent in any given locus. Cf. *B.N.*, p. 15.

[92] '*Jalahradaḥ saṃyoga-sambandhâvacchinna-vahnitvâvacchinna-pratiyogitā-nirūpaka-vahny-atyantâbhāvavān.*' For the use of '*nirūpaka*' see next paragraph.

[93] See example given in last footnote.

[94] E.g., *V.P.R.*, 51.2–4.

[95] E.g., *V.P.R.*, 100.5.

For example, the following is a (defective) definition of pervasion:

(3) 'nonoccurrent$_1$ of the *hetu* to a locus of absence of the *sādhya*'.[96]

Here 'absence of the *sādhya*' must be understood as an absence describing a counterpositive$_1$ which is limited by the limitor and by the limiting relation of the *sādhya*$_1$.[97] The reason for this is that 'absence of the *sādhya*' does not deny a relation with respect to one entity, *sādhya*, but denies a relation with respect to *any entity which serves* as a *sādhya*. Compare § 25. In the inference '[It] possess(es) fire because [it possess(es)] smoke', absence of the *sādhya* will mean absence of fire and the counterpositive$_1$ to this absence will be limited by fire$_1$ and contact. In the inference '[It] possess(es) earth$_1$ because it (is) a locus of scent', absence of the *sādhya* will mean absence of earth$_1$ and the counterpositive$_1$ to this absence will be limited by earth$_2$ and inherence.[98]

(B) where a whole description is negated. There are two methods here of expressing the limitors. The first can be used only where the description is simple, i.e., does not contain a further description.

(B1) simple. The counterpositive$_1$ to absence of staff-holder (i.e., absence of locus of staff) is limited by staff[99] and by contact. This is merely an odd application of the general principle that a relational abstract is limited by the qualifier of the entity in which it resides. One qualifier common to all loci of staffs is staff.

(B2) where the description contains a further description. For example, the following is another (defective) definition of pervasion:

(4) 'Nonoccurrent$_1$ of the *hetu* to that which possesses a mutual absence of locus of the *sādhya*'.[100]

Here mutual absence of locus of the *sādhya* describes a counterpositive$_1$ limited by *sādhya*-locus-ness (*sādhyavattva*).[101] One cannot say the limitor is *sādhya* as it was staff in (B1), for '*sādhya*' by itself denotes nothing. Furthermore, we want the limitor to vary as the inferences vary. Where the *sādhya* is fire,

[96] '*Sādhyâbhāvavad-avṛttitvaṃ hetor*'. This is the First Definition of the *Vyāpti-pañcaka*. It may also be expressed: '(there being) an absence in the *hetu* of occurrent$_1$ described by a locus of the *sādhya* — *sādhyâbhāvâdhikaraṇa-nirūpita-vṛttitvâbhāvo hetau*'; cf. note 74.

[97] '*Sādhyâbhāvaḥ sādhyatâvacchedaka-sambandhâvacchinna-sādhyatâvacchedakâvacchinna--pratiyogitāko bodhyaḥ*', *V.P.R.*, 29.1–4.

[98] Because earth$_1$ inheres in earth.

[99] Cf. *B.N.*, p. 18: '*daṇḍī nāsty ity atra daṇḍini pratiyogini viśeṣaṇatayôpasthito daṇḍo daṇḍi-gata-pratiyogitāyā avacchedakaḥ.*' For a similar example from the *V.P.R.*, cf. 97.23–98.4 and notes thereon.

[100] '*Sādhyavat-pratiyogikânyonyâbhāvavad-avṛttitvaṃ hetor*'. This is one way of expressing the Fifth Definition of the *Vyāpti-pañcaka*.

[101] [*Atrânyonyâbhāvaḥ*] *sādhyavattvâvacchinna-pratiyogitā-nirūpakaḥ*', *V.P.R.*, 100.1–7.

sādhya-locus-ness will be fire-locus-ness and this as much as fire is a qualifier of all loci of fire.[102]

29. Relation Between an Absence and its Locus

When the Naiyāyika speaks of a lake possessing an absence of fire (*vahny-abhāvavān hradaḥ*), he conceives of a direct relation between this absence and lake. This relation is not contact, for 'contact' means 'touch' and nothing can touch an absence. Contact is a limitor of the counterpositive$_1$, i.e., is the relation denied. Again, the relation between absence and a lake cannot be inherence, for inherence implies something to inhere. The Naiyāyikas call this relation between an absence and its locus a relation of absential particular qualification (*abhāvīya-viśeṣaṇatā-viśeṣa-sambandha*). It is a qualification relation, they would say, because absence of fire is cognized as a qualifier of lake.[103] It is particular because of the doctrine that each such relation is separate as opposed to the unity of all cases of inherence (cf. § 15). I shall symbolize this relation by '$\overline{P}$'. It is also termed an absential peculiar relation (*abhāvīya-svarūpa-sambandha*). Unfortunately, the Naiyāyikas do not always distinguish between positive and negative relations of particular qualification. In fact some of their arguments hinge on the ambiguity of the expression 'particular qualification'. An example is *V.P.R.*, 47.1–6.

From the foregoing one may see that every absence implies at least two relations to the Naiyāyika — the limiting relation of the counterpositive$_1$, and the relation in which the absence stands to its locus.

30. Limitors of an Absence

An absence is limited in two ways. The first is by its own limitors, absence$_1$ and the relation in which the absence stands.[104] These are the limitors which distinguish an absence from everything which is not an absence. But to distinguish one absence from another a different system of limitation is necessary. Obviously that which distinguishes one absence from another is the difference in that which is negated. Accordingly, the second way in which an absence is

[102] Note that fire and fire-locus-ness may qualify the same entity or limit the same entity, but are very different things. On the other hand, fire and locus of fire-ness are the same thing (cf. § 11).

[103] Where the cognition is in the form '(there is) absence of fire in a lake', lake is cognized as a qualifier of absence of fire. Thus cognition of an absence is *viśeṣaṇa-viśeṣya-bhāva*, that is, partakes of the nature of (cognition of) a qualifier or a qualificand. This is a distinction, however, that can be made only in the realm of cognition. Whichever form the cognition takes, viz., 'a lake possess(es) absence of fire' or '(there is) absence of fire in a lake', the relation *actually* subsisting between absence of fire and lake is said to be *abhāvīya-viśeṣaṇatā-viśeṣa-sambandha*.

[104] Normally this relation is $\overline{P}$, as explained above (§ 29). But occasionally it is temporal relation or content relation (cf. §§ 53 and 55 below).

limited is by the limitors of the counterpositive$_1$ to it. An example is *V.P.R.*, 96.3–5: '*guṇâdau sattâdeḥ saṃyoga-sambandhâvacchinnâbhāva-sattve 'pi*' (although there is an absence, limited by a relation of contact, of reality, etc., in quality, etc.). Here the relation contact is denied of the counterpositive, reality, i.e., contact limits the counterpositive$_1$ to the denial, but in the quotation it is said to be a limitor of the absence (denial) also. Another example is *V.P.R.*, 51.5: '*sādhyatâvacchedaka-sambandhâvacchinna-sādhyâbhāva–*'. Here '*avacchinna*' modifies '*abhāva*'. The meaning is: 'absence of the *sādhya*, which absence is limited by the limiting relation of the *sādhya*$_1$'.

31. Extraction (*paryavasāya*)

Both a locus$_1$ and an absence may be limited by the limitors of other entities, viz., of superstratum$_1$ (or occurrent$_1$) and of counterpositive$_1$, respectively. As a result, a knowledge or portion of a knowledge may often be expressed in two or more equivalent ways, e.g.,

(1) 'Locus$_1$ limited by fire$_1$ and contact',[105]

(2) 'Locus$_1$ described by a superstratum$_1$ limited by fire$_1$ and contact'.[106]

A pandit, in explaining such an expression as (1), regularly glosses it by an expression like (2). He calls (2) the 'extraction' (*paryavasāya*) or 'extracted meaning' (*paryavasitârtha*) of (1). Thus (2) extracts and actually expresses an entity, superstratum$_1$, that is only implicit in (1).

A similar example of equivalent expressions is the following pair:

(3) 'An absence limited by the limiting relation of the *sādhya*$_1$',[107]

(4) 'An absence describing a counterpositive$_1$ limited by the limiting relation of the *sādhya*$_1$'; [108]

(4) is the extraction of (3).

32. Expression of Instances of Pervasion

We have seen how Navya-nyāya can often express by means of abstract properties facts which Western logic expresses by quantification (§§ 22, 28). There is, however, an important class of expressions combining 'all' and 'some' for which we have not yet shown any Navya-nyāya equivalent. These are our three-term expressions that correspond to Navya-nyāya pervasions.

Take the statement:

(1) 'All bodies of smoke occur in a locus of fire'. We recognize what (1) means, but it must be admitted that 'a locus' and 'fire' are ambiguous, nor do we help matters by changing (1), Aristotelian fashion, to read 'some locus' and 'some fire'. We might still interpret (1) to mean that there is only one locus

[105] '*Saṃyoga-sambandhâvacchinna-vahnitvâvacchinnâdhikaraṇatā*'.

[106] '*Saṃyoga-sambandhâvacchinna-vahnitvâvacchinnâdheyatā-nirūpitâdhikaraṇatā*'.

[107] '*Sādhyatâvacchedaka-sambandhâvacchinnâbhāvaḥ*'.

[108] '*Sādhyatâvacchedaka-sambandhâvacchinna-pratiyogitā-nirūpakâbhāvaḥ*'.

(e.g., a mountain) for all bodies of smoke, or we might interpret it to mean that mountain smoke occurs on a plain and plains smoke occurs on a mountain. The first interpretation is dealt with by Aristotelian logic under the heading of fallacies *in dictione*; the second interpretation is what Navya-nyāya calls 'sifting' (*cālanīya-nyāya* or *cālanī-nyāya*).[109] According to Navya-nyāya, all statements combining 'all' and an expression equivalent to 'some' are impossible (*asambhava*), for the terms of such a statement can always be mis-sorted by sifting.

Navya-nyāya has a method of expressing unambiguously the facts referred to by (1). The method is more complicated than the translation of § 22 (6) by § 22 (4). In explaining it, let us start with the problem of quantification.

With the help of two negatives 'some' may always be translated into 'all'. 'Some swans are black' may be translated 'It is false that all swans are non-black'.[110] In (1) two terms are particularly quantified: by 'a locus' we mean 'some locus or other' and by 'fire' we mean 'some body of fire or other'. We can translate (1) into an expression all terms of which are universally quantified as follows:

(2) 'No body of smoke occurs in any locus in which no body of fire is present'.

Expression (2) can be rendered more exact by the symbolism of mathematical logic,[111] but it will suffice to show how all three terms become universal with the application of two negatives. Every definition of the *Vyāpti-pañcaka* contains two absences. In each case they are employed in order to avoid the ambiguity of 'some', 'a', or an equivalent expression.

We still have the problem of translating (2) into an expression using abstract properties instead of quantifiers. We may eliminate the third quantifier (the 'no' of 'no body of fire') by the principle explained in § 28. Thus:

(3) 'No body of smoke occurs in any locus of absence of fire, which absence describes a counterpositive$_1$ limited by fire$_1$ and contact'.

By the same principle we may eliminate the second quantifier (the 'any' of 'any locus'). Thus:

(4) 'In smoke there is a generic absence of occurrent$_1$ described by locus of absence of fire, which absence describes a counterpositive$_1$ limited by fire$_1$ and contact'.[112]

[109] *Cālanī*' means a sieve. *Śabda-kalpadruma* explains *cālanī-nyāya* (p. 1794) as an analogy to shaking grains of rice through a sieve. Strauss notices '*cālanī-nyāya*' in its technical sense as above (*Z.I.I.*, vol. 3, p. 117).

[110] Cf. Quine, pp. 101–102.

[111] Thus: '$(x)(x \in$ class of bodies of fire $\cdot \supset (y)(\sim(x$ occurs in $y) \supset (z)(z \in$ class of bodies of smoke $\cdot \supset \sim(z$ occurs in $y))))$'.

[112] '*Dhūme saṃyoga-sambandhâvacchinna-vahnitvâvacchinna-pratiyogitā-nirūpakâbhāvâdhikaraṇa-nirūpita-vṛttitva-sāmānyâbhāvaḥ*'.

A generic absence of occurrent$_1$ described by locus of x denies all specific manifestations of occurrent$_1$ described by a locus of x; it denies occurrent$_1$ described by locus a, locus b, . . . , locus n. The counterpositive$_1$ to such an absence is said to be limited by occurrent$_2$ and by locus of x (cf. Śiv. Misra, p. 24).

As to whether (4) has the effect of quantifying smoke as well as locus, there is a difference of opinion. Śiv. Miśra, p. 67, line 7 and presumably Mathura are of the opinion that it does. That is, if one says there is a generic absence of occurrent$_1$ to y in x, one is denying that any x occurs in any y, not simply that one x does not occur in any y. Those who are not of this opinion are forced to eliminate the first quantifier of (2) (the 'no' of 'no body of smoke') in some other way. One such way is to say:

(5) 'Smoke$_1$ is not a limitor of a generic occurrent$_1$ described by locus of absence of fire, etc'.[113]

33. Unnegatable (*kevalānvayi*) Terms. Distinction of Nondeviation (*avyabhicaritatva*) and Pervasion

The expression of § 32 (2) by § 32 (4) is the method of universalizing used in the First Definition of the *Vyāpti-pañcaka*. Each of its other definitions uses a slightly different method, but all make use of two absences in order to universalize their terms. There is one difficulty with this method of universalization. It will not work when one of the terms of the pervasion is unnegatable.

According to Nyāya there are some entities the absences of which have no locus. Such an entity is the property of being nameable (*vācyatva, abhidheyatva*), or the property of being knowable (*jñeyatva*). The Naiyāyika insists that every term in a valid knowledge must correspond to some existent entity in the universe. Absence of fire limited by contact in a lake can enter a valid knowledge, for fire in contact corresponds to an existent entity and so does its absence in a lake. But absence of the property of being knowable by $\overline{\text{P}}$ cannot enter a valid knowledge. Such an absence corresponds to nothing at all.

Although knowable$_1$ is pervaded by nameable$_1$ just as much as smoke is per-

[113] '. . . *vahny-abhāvâdhikaraṇa-nirūpita-saṃyoga-sambandhâvacchinna-vṛttititātvâvacchinna-vṛttitvânavacchedakatā dhūmatve*'. Cf. Śiv. Miśra, p. 67, line 9 ('*vṛttitâvacchedaka*' is a misprint for '*vṛttitânavacchedaka*'; cf. *S.M.*, 68, last sentence). '*Vṛttitātvâvacchinna-vrttitva*' = 'generic occurrent$_1$'.

One cannot say 'there is an absence of occurrent$_1$, the counterpositive$_1$ to which is limited by occurrent$_2$ and by smoke$_1$, described by locus of absence of fire etc.', for there is no such thing as an occurrent$_1$ limited both by smoke$_1$ and by locus of absence of fire. To negate such an occurrent$_1$ would be to negate a nonentity and this is not allowed, as will be explained below (§ 33). Expression (5) splits the contradictory limitors of occurrent$_1$ and so is acceptable. In the same way, those Western logicians who object to 'For all x, x is not a square triangle' as meaningless have no objection to 'For all x, if x is a square, x is not a triangle'.

vaded by fire, if in § 32 (4) we substitute knowable$_1$ and nameable$_1$, respectively, for smoke and fire, the result, viz.:

> 'In knowable$_1$ there is a generic absence of occurrent$_1$ described by locus of absence of nameable$_1$, etc.',

will contain unexampled (*aprasiddha*) terms and so not be valid.

The *Vyāpti-pañcaka* and its commentaries do not deal with methods of expressing instances of pervasion of unnegatable terms. The following is a brief indication only of one such method.

The problem is to find a method of expression that will not require us to negate the unnegatable entities. If for all x we cannot validly speak of absence of knowable-ness in x, we *can* say that knowable-ness is not the counterpositive of an absence residing in x. The expression:

> 'generic absence of counterpositive$_1$ in knowable$_1$ to an absence residing in locus of namable$_1$'[114]

does not negate anything unnegatable. There *are* absences in loci of namable$_1$ (e.g., absence of fire in lake), there *are* counterpositive-nesses described by these absences (e.g., the counterpositive$_1$ described by absence of fire), and there *is* a generic absence of such counterpositive$_1$ in knowable$_1$.

It is this difficulty of universalizing knowledges that contain an unnegatable term that causes all five definitions of the *Vyāpti-pañcaka* to fail as definitions of pervasion. What these five definitions actually define is called nondeviation (*avyabhicaritatva*). It may be useful to give here a rough distinction between nondeviation and pervasion.

There is nondeviation of b (e.g., smoke) with respect to a (e.g., fire) when b is never found except in a locus of a. There is pervadedness of b with respect to a when a is always found where b is found.

34. Symbols for limitors and describers

In the remainder of Section II and in the notes accomping Sections IV and V, I shall, when convenient, indicate limitors and describers by symbols.

The limitors of an entity will be indicated by enclosing them in top corners '⌜ ⌝' and placing them to the left of the entity limited. Thus,

> '⌜fire$_1$, C⌝ absence'

will represent

> 'an absence limited by fire$_1$ and the relation contact'.

The describer of an entity will be indicated by enclosing it in bottom corners '⌞ ⌟' and placing it to the right of the entity described. Thus,

> 'occurrent$_1$ ⌞mountain⌟'

will represent

> 'an occurrent$_1$ described by mountain'.

[114] *jñeyatve vācyatvâdhikaraṇa-niṣṭhâbhāva-nirūpita-pratiyogitā-sāmanyâbhavaḥ'.*

35. Conjunction and Alternation

Navya-nyāya logic has the superficial appearance of a nonpropositional system of logic, for the form of expression of any element of its discourse is usually that of a single term rather than that of a statement (proposition). However, many of these expressions actually refer to knowledges corresponding to statements rather than to individuals or classes. 'An absence of $occurrent_1$ in fire described by $locus_1$ in lake' is only in the Sanskrit verbal form a single term, just as the written forms of 'ϕ' and 'ψ' are those of single terms even when 'ϕ' and 'ψ' symbolize whole propositions. It is because the long Nyāya compounds terminating in 'absence' or in the name of an abstract property actually refer to whole knowledges or statements, and because these compounds can be combined in various ways as we would combine Greek letters, that the Navya-naiyāyikas were able to understand clearly some problems of which classical Aristotelianism was ignorant. They understood, for instance, the truth-functional nature of 'and' and 'or'.[115]

Anyatara (one or the other) is defined as '*bheda-dvayâvacchinna-pratiyogitāka-bhedavat*' (that which possesses a mutual absence to which the $counterpositive_1$ is limited by two mutual absences).[116] This definition covers the use of '*anyatara*' both as a connective between single terms and as a propositional function. An example of the former use is 'either fire or water' (*vahni-jalânyatara*). According to the definition, this means 'that which is different from that which is both different from fire and different from water'. The latter use, however, is logically more interesting. An example is '(there resides) in fire either $occurrent_1$ described by mountain or $occurrent_1$ described by lake' (*vahnau parvata-nirūpita-vṛttitva-jalahrada-nirūpita-vṛttitvânyataratva*). In a valid knowledge this is exactly equivalent to the compound proposition: '(fire occurs on a mountain) or (fire occurs in a lake)'. According to the Navya-nyāya definition, this means: 'fire possesses that which is different from that which is both different from $occurrent_1$ described by a mountain and different from $occurrent_1$ described by a lake'. As applied to such examples, the Navya-nyāya definition is exactly the modern definition of the inclusive 'or':

[115] For nonlogicians 'truth function' will be briefly explained in note 117. Aristotelianism, at least in classical times, was wholly ignorant of this branch of logic. On the other hand, the Stoics, whose logic was propositional, understood the nature of truth functions. The importance of their logic has only recently been understood, chiefly through the studies of Jan Łukasiewicz. I am indebted to Professor W. V. O. Quine for pointing out to me Łukasiewicz's article in *Erkenntnis*.

[116] This definition is from the *Vācaspātya*, *s. v.* anyatara. *Śabda-kalpadruma*, vol. I (1821) has the same definition except that it omits the first '*bheda*', and the definition undoubtedly goes back many centuries before this.

$$\text{`}p \vee q \cdot \equiv \sim(\sim p \cdot \sim q)\text{'}.^{117}$$

The alternation ': occurrent$_1$ ⌞mountain⌟ or occurrent$_1$ ⌞lake⌟' covers three different distributions of truth values to its components. On the other hand, the conjunction ': occurrent$_1$ ⌞mountain⌟ and occurrent$_1$ ⌞lake⌟' covers only one of the four possible distributions.

36. Absence of the Conjoint (*ubhayâbhāva*). Absence of the Alternation (*anyatarâbhāva*)

The terms '*ubhaya*' and '*anyatara*' are used chiefly in negations.

'Absence of the conjoint' [118] (*ubhayâbhāva*) can be applied to three cases: '$\sim p \cdot q$', '$p \cdot \sim q$', '$\sim p \cdot \sim q$'.[119] The following example of absence of the conjoint occurs in Mathura's *V.P.R.* (24.1–3 and 100.4):

[117] Such definitions are most easily explained by truth tables; cf. Quine, Chap. 1 from which the following is summarized. The truth table for 'and' is:

p	$\cdot$	q
T	T	T
F	F	T
T	F	F
F	F	F

Here 'p' stands for any statement, e.g., 'John is tall'; 'q' stands for any statement, e.g., 'Mary is short'. The columns under p and q represent different distributions of truth (T) and falsity (F) to these statements. The column under '.' shows the resulting truth or falsity of the compound statement 'p and q'. The compound statement is shown to be true for only one distribution of truth values.

The truth table for the inclusive 'or' (Latin '*vel*', 'either one or the other or both') is:

p	$\vee$	q
T	T	T
F	T	T
T	T	F
F	F	F

The compound statement 'p or q' is true for three distributions of truth values to its terms. It is false only in case both p and q are false. '$\equiv$' is the symbol of equivalence. '$\vee$' is the symbol of the inclusive 'or'. Hence the definition: '$p \vee q \cdot \equiv \sim(\sim p \cdot \sim q)$.' The inclusive 'or' is so called to distinguish it from another sort of 'or' (Latin '*aut*'), meaning one or the other but not both, e.g., 'He is either in New York or in Boston'.

'And' and 'or', when they join statements, are called truth functions or, by some logicians (e.g., Whitehead and Russell), propositional functions, because the truth value of the compound whose parts they join is determined solely by the truth values of its components. When the elements joined by 'and', 'or' etc. are not statements, these words may be called simply 'connectives'.

[118] Mathematical logic calls this 'alternative denial', since '$\sim(p \cdot q)$' is equivalent to '$\sim p \vee \sim q$'.

[119] Despite Sen, p. 26, '*ubhayâbhāva*' must apply to '$\sim p \cdot \sim q$' as well as to '$p \cdot \sim q$' and '$\sim p \cdot q$'. Otherwise '*ubhaya*' ('both') would apply to '$\sim p \cdot \sim q$'. For empirical proof,

Two entities reside in fire: (1) occurrent$_1$ described by a locus of − smoke (viz., a hot iron); one may call this 'p'. (2) absence of water-ness; one may call this '$- q$'. Accordingly, there resides in fire the absence of the conjoint $p \cdot q$ (*dhūmâbhāvavad-vṛttitva-jalatvôbhayatvâvacchinnâbhāva*).

'Absence of the alternation'[120] (*anyatarâbhava*) can be applied to only one case, viz., $\sim p \cdot \sim q$. For an example of such an absence, cf. *V.P.R.*, 91.1–92.6 and notes thereon.

37. Generic Absences (*sāmānyâbhāva*) and Specific Absences (*viśeṣâbhāva*)[121]

A generic term is said to pervade all its specifics. Thus, smoke qualified simply by smoke$_1$ pervades mountain smoke, hearth smoke, etc. A generic absence, on the other hand, does not pervade but is pervaded by its specific absences. Thus:

x pervades x^1, x^2, and x^3,

but

$-x^1$ pervades $-x$,

for −mountain-smoke resides not only in all the loci of ⌜smoke$_1$⌝ absence, it resides in most loci of smoke qualified by smoke$_1$ as well. A specific absence is said to be '*atirikta*' of, that is, to fall outside the circle of, the corresponding generic absence,[122] whereas a positive specific term is said to be 'not *atirikta*' of the corresponding generic term.[123]

38. Application of De Morgan's Law. *Abhāva-kūṭa*

De Morgan's law[124] states that a denied alternation is equivalent to the conjunction of the denials: '$\sim(\phi \vee \psi) \equiv \cdot \sim \phi \cdot \sim \psi$'. I know of no statement of this law in Navya-nyāya, but the argument of Gaṅgeśa's *Vypāti-pañcaka* offers an application of it. The argument is basically this:

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cf. last insertion in *S.M.* 69 (p. 313, line 14) and *Rāmarudrīya* thereon (p. 314, line 7), which says that the substitution of '$\sim(p \cdot q)$' for '$\sim p \cdot \sim q$' in this passage cures an *avyāpti* (a definition that applies to insufficient cases). He does not say that it cures an *asambhava* (a definition that applies to only false cases).

[120] Mathematical logic calls this joint denial, since $\sim(p \vee q)$ is equivalent to $\sim p \cdot \sim q$.

[121] Cf. Sen, pp. 25–26.

[122] Sen, p. 25.

[123] Specific absences are in effect absences of conjoints. The use of '*viśiṣta*' to mean 'accompanied by' will be discussed below (§ 41). 'Absence of mountain-smoke' is equivalent to 'absence of the conjoint, smoke-ness and occurrent$_1$ described by mountain'. Therefore this type of absence is subdivided into three minor types according as the absence is occasioned by absence of the first term, the second term, or both; cf. *N.K.*, *s. v. viśiṣṭam*.

[124] The law takes its name from the nineteenth-century British logician. It was understood, however, by Petrus Hispanus and others in the Middle Ages; cf. Łukasiewicz, p. 122.

(1) 'Nondeviation (*avyabhicaritatva*) is a (first definition) and nondeviation is b (second definition) and . . . and nondeviation is e (fifth definition)'.

(2) 'It is false that: 'pervasion (*vyāpti*) is a or pervasion is b or . . . or pervasion is e' '.

(3) [Therefore, 'pervasion is not a and pervasion is not b and . . . and pervasion is not e'.]

(4) Therefore 'pervasion is not nondeviation'.

More interesting than this application of De Morgan's law, since Gaṅgeśa was probably unconscious of the principle involved,[125] is the principle of which Mathura seems aware in his comment on this argument of Gaṅgeśa, viz., the class corollary of De Morgan's law. This may be stated: [126]

$$\sim (a \cup b) \equiv \sim a \cap \sim b.$$

I say Mathura seems aware of this principle. What he actually says is rather different from the statement of the law given above, and requires some explanation.

Suppose a is a generic term (a term qualified by a class character) such as fire qualified by fire-ness, and that a^1, a^2, . . . a^n are the corresponding specific terms such as mountain-fire, hearth-fire, . . . , crossroads-fire. Not every locus of $-a^1$ will be a locus of $-a$ (see above). However, that which is a locus of $-a^1$ and at the same time a locus of $-a^2$, and . . . and at the same time a locus of $-a^n$ will be a locus of $-a$. That is, all loci of $-a^1 \cap -a^2 \cap \cdots \cap -a^n$ are loci of $-a$. The Naiyāyika states this as follows: 'The counterpositive$_1$ to the *kūṭa* (literally 'heap') of specific absences is limited by the class character'.[127] This is merely another way of saying that the counterpositive to $-a \cap -b$ is $a \cup b$.

Mathura (*V.P.R.*, 7.5–6), in commenting on Gaṅgeśa's argument, says that the *kūṭa* (heap) of specific absences causes (i.e., is equivalent in truth value to) the generic absence. That is, in Gaṅgeśa's argument as resumed above, (2) causes (4).

Another example of the term '*abhāva-kūṭa*' is furnished by Mathura's comment on the fourth of Gaṅgeśa's definitions. Mathura there supposes that the generic absence of a *sādhya* (in our stock example of inference, absence of fire

[125] Had he been conscious of the principle, he would probably have expressed (3).

[126] Cf. Quine, p. 181. Where a = the class of Sanskritists and b = the class of logicians, the sum of a and b, written '$a \cup b$', being the class composed of all members of a and all members of b, is the class composed of all Sanskritists and all logicians. The product of a and b, written '$a \cap b$', is the class whose sole members are members of both a and b, i.e., the class composed of Sanskritists who are logicians as well.

[127] "*Viśeṣābhāva-kūṭānāṃ sāmānya-dharmâvacchinna-pratiyogitākatvaṃ svīkrīyate,*" *N.K.*, *s. v. abhāvaḥ* (p. 66, lines 18–19), quoting Raghunātha's *Dīdhiti*.

limited by fire-ness) differs according to the particular loci where it occurs.[128] He thus imagines an infinite series: absence of fire in lake x, absence of fire in lake y, . . . , etc. It is said that there is no locus of the *kūṭa*[129] of these particular manifestations of the generic absence. In Western terms, the product of such classes is a null class.

'*Abhāva-kūṭa*' in these examples can only mean 'logical product of the absences . . .' Despite this, I believe Navya-nyāya possesses no general terms for logical sum and logical product.

39. Equality, Equivalence, Identity, Essential Identity

In Western logic the first three of these terms may be roughly distinguished as follows. Equality is a relation between classes.[130] Equivalence is a truth function connecting statements or formulae.[131] Identity is a relation between individuals.[132]

The *Nyāya Kośa's* definition of equality (*tulyatva*) is, "x is equal to y when x has all the manifestations (*vyakti*) of and no other manifestations than y." The similarity to Quine's definition quoted in note 130 is striking. Since only generic characters and properties have manifestations, equality can only be used of a relation between these.

Since the Naiyāyikas do not distinguish terms from propositions, they have no word exactly corresponding to 'equivalence'. The word that is most regularly used where in translation one would say 'is equivalent to' is '*sama-niyatā-bhāva*'.[133] According to *N.K.*, *sama-niyatā-bhāvatva* is the relation of x to y such that x pervades y and x is pervaded by y; x and y may belong to any category.

Navya-nyāya possesses no term the meaning of which is exactly synonymous with identity as usually defined in modern Western logic. What Navya-nyāya makes great use of is expressions referring to a broader sort of identity. Examples:

[128] The supposition is a sophistical one. By Mathura's own admission, absences with the same limitors are identical.

[129] The term '*abhāva-kūṭa*' is not actually used by Mathura in this passage; it is supplied by the author of the Ṭippaṇī *T.C.*, II, p. 43.

[130] Quine's definition of equality (p. 136) is:

$$\ulcorner(\zeta = \eta)\urcorner \text{ for } \ulcorner(\alpha)\ \alpha \epsilon \zeta \,.\equiv .\ \alpha \epsilon \eta)\urcorner.$$

This says that ζ is equal to η when all members of ζ are members of η and vice versa.

[131] E.g., 'John is William's father' is equivalent to 'William is John's son'.

[132] One may define identity thus: 'p is identical with q' means 'p is the same individual as q'. Not all modern logicians distinguish identity from equality. Within Quine's system the definition of equality (see note 130) will apply to individuals as well as classes.

[133] Cf. Śiv. Miśra, 44.10, 45.2.

'x *y-svarūpa*',	literally,	'x is of the same nature as y';
'x *y-tādātmya*',	literally,	'x has sameness of self with y';
'x *y eva*',	literally,	'x is just y'.

These three expressions are used synonymously and may each be translated 'x is essentially identical with y'.

Let us not pass over this concept of essential identity too hastily. It is basic to the Nyāya view of the world. What the Naiyāyika is interested in is reals, not expressions. He is not fully satisfied with establishing an identity on the basis that two expressions are interchangeable. He wishes to know whether the two objects themselves (for example, pot and — —pot) are the same. Have they the same self, the same nature? Are they *essentially* identical?

Essential identity (*tādātmya, tat-svarupatā*) may be defined as the limiting relation of counterpositive$_1$ to a mutual absence.[134] Since we have symbolized mutual absence by '$\dot{-}$', we may represent 'is essentially identical with' by a similar sign, '$\doteq$'.

Let us now examine some difficulties to which this concept of essential identity leads.

40. Constant Absence of Constant Absence

A famous controversy in Navya-nyāya is whether

(1) '— —pot $\doteq$ pot'.

Expression (1) is accepted by the conservatives. Mathura states their reason, *V.P.R.*, 44.6–10: "Wherever one perceives a pot, there one does not perceive absence of a pot, and there one may say there is absence of constant absence of a pot."

The most famous opponent of (1) was Raghunātha. He states his argument briefly in *P.T.N.*, p. 55. The point is that all absences have as their nature absence$_1$ (*abhāvatva*), an imposed property according to Raghunātha, the nature of the seventh category according to the conservatives, and no amount of legerdemain can turn these absences into entities whose nature is presence$_1$ (*bhāvatva*), a different imposed property according to Raghunātha, the nature of the first six categories according to the conservatives. Raghunātha claims that his argument does not lead to an infinite series (*anavasthā*), since a third absence is essentially identical with the first absence ($- - -x \doteq -x$).[135]

[134] Cf. § 27 and *S.M.*, 12, "*anyonyâbhāvatvaṃ tādātmya-sambandhâvacchinna-pratiyogitākâbhāvatvam.*"

[135] Intuitionistic logic, as Professor Quine has pointed out to me, denies the equivalence of $\sim\sim a$ and a. It admits that a implies $\sim\sim a$ but not that $\sim\sim a$ implies a. An interesting point of comparison wtih Navya-nyāya is that the Intuitionists avoid an infinite series just as Raghunātha does; they admit the equivalence of $\sim a$ and $\sim\sim\sim a$. See Heyting, p. 49, formulae 4.3, 4.31, and 4.32.

Mathura seems to share Raghunātha's opinion (*V.P.R.*, 41.2–3), but in deference to those who do not, he refines his statements so that they will hold true under the traditional theory.

41. Essential Identity of a Pure Entity with a Qualified Entity. Difference in the Qualifiers and in the Locus$_1$ Described

It is generally accepted in Navya-nyāya that

(1) 'A blue pot ≐ a pot'.

This seems strange at first sight for two reasons. First, we are apt to forget that the Naiyāyikas are talking about entities and not words. 'Blue pot', the expression, is not essentially identical with 'pot'. Second, the relation '≐' in (1) subsists between the qualificands expressed on either side of it rather than between the whole complexes. That which is expressed by 'pot' alone is the type or framework that subsists in all knowledges of pots. It is known from the basic discrimination that all these knowledges have in common, and it is the same in a knowledge of blue pot, red pot, or simply a pot. According to Navya-nyāya, if one does not accept (1), one must admit that a blue pot is not a pot (cf. *Ragh.*, 19–20).

The acceptance of (1) leads to constant difficulties. Since that which is essentially identical with x is x, it would seem that a blue pot can always be substituted for a pot. This produces an obvious fallacy. The substitution of a pure entity (pot) for a qualified entity (blue pot) causes a less obvious fallacy, but one that is just as serious, as the following example will show.[136]

Reality is a generic character, one and eternal, inhering in the first three categories (substance, quality, action). However, one may distinguish that part of reality which is the share of substance only by calling it 'reality qualified by other-ness than quality or action' (*guṇa-karmânyatva-viśiṣṭa-sattā*).[137] Let us call this briefly 'qualified reality' as opposed to the most extensive or 'pure reality' (*śuddha-sattā*). We may now construct the following valid inference:

(2) '[It] possess(es) substance-ness because [it possess(es)] qualified reality'.

[136] It is a favorite Navya-nyāya example. It is given in *S.M.*, 68 (near end); *V.P.R.*, 65.5–6 and 67.1–4.

[137] The sense in which 'qualified' (*viśiṣṭa*) is here used is different from the sense in which it was used in § 17. There it meant distinguished by (*vyāvartita*), in which sense one may say that a blue pot is qualified by potness and blueness. Here it is said to mean accompanied by ("*atra vaiśiṣṭyaṃ ca sāhityaṃ sāmānâdhikaraṇyaṃ vā jñeyam*" *N.K.*, s. v. viśiṣṭam), and we may say that a blue pot is a locus of potness qualified by blueness. Our qualified reality is accordingly a generic character accompanied by otherness than quality or action. This 'otherness than quality or action' (*guṇa-karmânyatva*) might equally well be translated 'the property peculiar to that which is other than quality or action'.

We may analyze this diagrammatically:

s: substance$_1$	$-s$: quality$_1$ action$_1$ generic character$_1$, etc.	h: qualified reality
locus of s: substance	loci of $-s$: quality action generic character, etc.	

But, according to the First Definition of the *Vyāpti-pañcaka,* (2) can be true only if h occurs in no locus of $-s$. Now, on the analogy of (1) we may say:

(3) 'Pure reality $\doteq$ qualified reality',

and pure reality does occur in quality and action. Then (2) appears to be false.[138]

The Naiyāyika faces all these difficulties rather than give up (1). He overcomes the difficulties by expressing the difference where he conceives the difference to lie: (*a*) in the qualifiers of the essentially identical entities, and (*b*) in the locus-nesses they describe.

(*a*) The entities known as 'pot' and 'blue pot' are essentially identical but they are known in different ways. 'Blue pot' expresses a knowledge of pot accompanied by a knowledge of blueness, and it is in virtue of this accompaniment that 'blue pot' cannot be applied to as many entities as 'pot'.[139]

Now, to show that the inference (2) is valid:

We cannot say that reality, in so far as it is qualified simply by reality-ness, fails to occur in quality and action, but we can say that it fails to occur there in so far as it is qualified by otherness than quality and action. If, in our definition of pervasion, we require that the *hetu* as qualified by all its qualifiers not occur in any locus of $-s$, then (2) can be shown to be true.[140]

(*b*) It is true that if a blue pot is on the ground, the same entity is on the ground as when a pot is on the ground. Still, when I know simply that a pot is on the ground, ground has not become a locus in virtue of the blueness qualifying an entity, but simply in virtue of the potness qualifying an entity. Tech-

[138] Note that the companion fallacy — that of substituting qualified reality for pure reality — will not occur under the First Definition of the *Vyāpti-pañcaka.* If we say '[It] possess(es) substance$_1$ because [it possess(es)] reality', this can be shown to be false despite the fact that qualified reality does not occur in quality and action. Our definition requires that *no hetu* occur in a locus of $-s$ and pure reality certainly is a *hetu.* This companion fallacy may occur, however, if pervasion is differently defined. It occurs, for example, under the Fourth Definition of the *V.P.*; cf. *V.P.R.*, 96.1–3.

[139] Compare § 22, where it was shown that a crooked stick, as stick, possesses cause$_1$ to pot, but in virtue of being crooked does not cause pots.

[140] This is the principle by which *S.M.*, 68 (last two sentences) avoids the fallacy. Mathura's method (*V.P.R.*, 64.1–4) is somewhat more complicated. See notes on the passage in question.

nically, the locus_1 in ground is described only by an entity qualified by potness; it is not described by an entity qualified by blueness.

Navya-naiyāyikas are forced to keep constant guard against contradictions arising from (1).[141] Only the most uncompromising realism could force a school of logic to accept such a theorem. It is because of this theorem that we have in Navya-nyāya what at first looks impossible: 'x is essentially identical with y' used both where we should say 'x contains (or implies) y' and where we should say 'x is contained in (is implied by) y'.

42. Constant Absence of Mutual Absence (*bhedâbhava*, $- \dot{-} x$)[142]

We have seen that Navya-nyāya resolves, if with some difficulty, many of the contradictions to which its realist conception of identity leads. We shall now examine a contradiction arising from the same source that is more intractable.

It was generally admitted that

(1) '$- \dot{-}\text{pot} \doteq \text{potness}$'.

This may be proved as follows:

$\dot{-}$pot occurs in all things that are not pots;

$- \dot{-}$pot occurs in all things that are pots;

That which occurs in all members of a class of entities is the class character of those entities;

The class character of pots is potness;

If x occurs wherever y occurs and vice versa, then x and y are essentially identical;[143]

Therefore, $- \dot{-}\text{pot} \doteq \text{potness}$.

However, to admit that '$- \dot{-} x \doteq x_1$' leads to a difficulty. Abbreviating 'counterpositive' by 'c':[144]

$- - x \doteq x$; (§ 40)

Therefore, $- - \dot{-} x \doteq \dot{-} x$; (by substitution)

c of $- - \dot{-} x \doteq c$ of $\dot{-} x$; (entities denied by essentially identical entities are themselves essentially identical)

c of $- - \dot{-} x \doteq - \dot{-} x$ and c of $\dot{-} x \doteq x$; (by definition of c)

Therefore, $- \dot{-} x \doteq x$.

The usual Navya-nyāya solution of this difficulty is not a happy one. They say that $- \dot{-} x$ has a double nature (*ubhaya-rūpatva*, Śiv. Miśra 51.3), that of x_1 and that of x. As Mathura puts it:

[141] Cf. *V.P.R.*, 59.3–61.2, 63.6–8, 64.1–4, 91.1–92.6, 95.3–8, 96.1–3, 101.18–102.7.

[142] For mutual absence of mutual absence ($\dot{-} \dot{-} x$), cf. notes to *V.P.R.*, 101.1–5.

[143] Cf. the reason Mathura adduces (§ 40) for accepting '$- - x = x$'.

[144] The following is an expansion of *V.P.R.*, 44.1–3.

(2) '$- \dot{-}x \doteq x$ just as $- \dot{-}x \doteq x_1$'.[145]

Since Mathura accepts (2) without admitting that x_1 is essentially identical with x, it is obvious that his meaning is:

(3) 'Sometimes $- \dot{-}x \doteq x$ and sometimes $- \dot{-}x \doteq x_1$'.[146] Śiv. Miśra states explicitly (46 Ṭippaṇī, line 9): "The modern view is that '$- \dot{-}x \doteq x_1$' does not hold in all cases.

However, there were Naiyāyikas who objected strongly to the use of '$\doteq$' in (2). As Raghudeva puts it (in the mouth of an opponent), one cannot call an entity essentially identical with another unless it *always* is found where that other is found.[147]

Frankly, I can see no satisfactory solution as long as one insists on talking about the entity that $- \dot{-}x$ is. The whole confusion could be cleared up by shifting the discussion to the relation between statements (or knowledges if you will) about $- \dot{-}x$ and ones about x, that is, by discussing implication and equivalence rather than essential identity.

43. Direct and Indirect Relations

Contact, inherence, and particular qualification are direct relations (*sākṣāt-sambandha*) as opposed to indirect relations (*paramparā-sambandha*). An indirect relation is one where a is related to c through b. There are many types of indirect relation. An example is the relation called '*samavāyi-samavetatva*'—'inherence (of c) in that which is inhered in (viz., b) by the subject (a)'. The color of the threads is related to the cloth by this relation,[148] for the cloth (c) inheres in its parts, the threads (b), and these are inhered in by their color (a).[149] Other indirect relations will be found listed in *S.M.*, 18,62. Some very fanciful ones are given *B.N.*, p. 10 and Sen, p. 18.

Mathematical logic distinguishes relations as dyadic, triadic, etc., according to the number of terms they contain. Thus the relation such that a is in contact with b, is dyadic. The relation such that a is between b and c is triadic. The Navya-nyāya distinction is similar, but differently conceived. In the example given above of an indirect relation, this relation is said to subsist between only two terms, a and c. There is only one adjunct, to wit, a, and one subjunct, to wit, c. Properly speaking, b is not a term of the indirect relation, but is a term of two different direct relations which go to make up the indirect relation.

[145] '*Pratiyogitâvacchedakavat pratiyogy apy anyonyâbhāvâbhāvaḥ*,' *V.P.R.*, 50.1.

[146] That is, 'For all x, $- \dot{-} x \doteq x$ or $- \dot{-} x \doteq x_1$'.

[147] *P.T.N.*, Commentary, p. 56, lines 9–11. The same theory, introduced by the impersonal "they say", is given by Mathura, *V.P.R.*, 93.1–4.

[148] *B.N.*, p. 10, and *S.M.*, 18.

[149] Color is one of the 24 qualities, and so inheres in substances.

44. Occurrence-Exacting and Non Occurrence-Exacting (*vṛtti-niyāmaka* and *vṛtty-aniyāmaka*) Relations

The distinction between occurrence-exacting and non occurrence-exacting relations has already been mentioned (§ 19). In these expressions 'exacting' (*niyāmaka*) means 'limiting' (*avacchedaka*).[150] An occurrence-exacting relation is one which may be the limiting relation of the occurrent_1 in an entity (cf. § 23). We have seen that contact may or may not be occurrence-exacting; H and P (including $\overline{\text{P}}$) always are. Besides these, temporal relation (both direct and indirect) and *paryāpti* relation are considered to be occurrence-exacting; they will be discussed below.

Examples of non occurrence-exacting relations are pervasion, essential identity, etc. The pervader does not 'occur' in the pervaded, it occurs in loci of the pervaded. An entity does not occur in itself; it is essentially identical with itself.

Indirect relations, with the exception of the indirect temporal relation, are usually considered to be non occurrence-exacting.[151]

45. Incomplete Occurrence

A relation is said to be of incomplete occurrence (*avyāpya-vṛtti*) if it is a relation such that x occurs in only part of y. Contact, and the absence of an entity by contact, are the only relations of this sort that will concern us.[152] The first is always of this sort. If a monkey is in a tree, the monkey is related to only a part of the tree, say a part of one of its branches, by contact. Likewise, constant absence of monkey by contact is related by $\overline{\text{P}}$ to only part of the tree, viz., the parts such as the roots with which the monkey is never in contact.

Where a = contact with monkey, and x = tree, the following apparent contradiction arises: 'x is a locus of a and x is a locus of $-a$'. Here $-a$ is an example of a *pratiyogi-samānâdhikaraṇâtyantâbhāva* — a constant absence that occurs in the same locus as does its counterpositive.

The Navya-naiyāyikas sought to solve this apparent contradiction in the following way. The contact with monkey, they said, does not have its occurrent_1 in this tree limited by this-tree-ness. Its occurrent_1 in this tree is limited by the part of this tree in contact with monkey, e.g., a particular branch. Similarly, the occurrent_1 in this tree of absence of monkey-by-contact is limited by the part of

[150] According to *B.N.*, p. 16, '*niyāmaka*' and '*avacchedaka*' are in fact synonymous. It is only the customary usage (*prayoga*) of authors that requires '*avacchedaka*' instead of '*niyāmaka*' in most contexts.

[151] *B.N.*, p. 11, line 10.

[152] Raghunātha considered that inherence might be a relation of incomplete occurrence too, for redness is said to inhere in a red pot, yet when we break the pot we may find that only the outsides of the shards are red, the rest black. Again, a black cow may have a white face. *P.T.N.*, p. 32.

this tree that is not in contact with monkey, e.g., roots. In this example, besides the occurrent$_1$ mentioned above, two other entities may be termed limited: (1) the quality contact (with monkey); (2) the locus$_1$ to contact with monkey residing in the tree. The Naiyāyikas recognize that 'limitor' here has a different sense from that which we have discussed above (§§ 22 and following). They gloss it by '*sīmā-paricchedaka*' — delimitor of the (physical) boundary.[153] In this sense, the locus (e.g., branch) of a locus (e.g., tree) of an entity (e.g., contact with monkey) may limit that entity.[154]

46. Unlimited Locus$_1$ (*anavacchinnâdhikaraṇatā*)

While the locus$_1$ residing in a locus of an entity of incomplete occurrence is termed limited, the locus$_1$ residing in a locus of an entity of complete occurrence is termed an unlimited locus$_1$ (*anavacchinnâdhikaraṇatā*). For example, the locus$_1$ in tree to absence of contact with monkey is limited, since this absence occurs in some parts of the tree but not others, but the locus$_1$ in quality to absence of contact with monkey is unlimited, for this absence is present in all qualities. Contact, being itself a quality, can only inhere in substances. Since 'limited' has here a different sense from that explained in §§ 22 and 23, an 'unlimited' locus$_1$ may still be limited by a relation and properties in accordance with the principles laid down in §§ 22 and 23.[155]

47. Types of Relation

The number of possible relations between entities is greater than the number of entities, but there are certain types of relation that cover a great number of cases. Some of these have already been mentioned. I list below all those which are mentioned in the *V.P.R.*, with such explanations as seem necessary.

48. Contact (C) (*saṃyoga*)[156]

Contact is considered to be a quality, that is, a member of the second category. Like other qualities, contact inheres in substances, but unlike most qualities, it inheres in pairs rather than in single individuals. For example, when fire

[153] *B.N.*, p. 17.

[154] Cf. *N.K.*, *s. v.* avacchedakatvam (p. 84, lines 18–22): "Sometimes the locus of *x* may limit that which resides in *x*. Since contact with monkey resides in the tree, not in the root but in the branch, etc., the root, which is a locus of tree, is a limitor of absence of contact with monkey, which absence resides in the tree, and the branch, which is a locus of tree, is a limitor of contact with monkey, which resides in the tree."

[155] Śiv. Miśra, 60.10–12, notices this apparent contradiction and explains it as above, that is, by the special meaning of 'limited' in the term 'unlimited'.

[156] *B.N.*, p. 9; Sen, pp. 19–20. Concise and informative articles on this and the following three relations will be found in *N.K.*

is in contact with a mountain, contact inheres in fire and mountain.[157] Contact is an occurrence-exacting relation of incomplete occurrence. It is transient, for we see it destroyed before the destruction of the entities it connects.

49. Inherence (H) *(samavāya)* [158]

According to the conservative Naiyāyikas, inherence forms a category of its own.[159] It is an occurrence-exacting relation between one entity and more than one entity. Unlike contact, it is a relation of complete occurrence.[160] Generic characters inhere in substances, qualities, and actions. Actions and qualities inhere in substances. Substances inhere in their parts. Of the substances, those which are eternal, viz., air (ether), time, soul, and space (direction), cannot inhere in anything.[161] Inherences is said to be one and eternal.[162]

50. Peculiar Relation (P) *(svarūpa-sambandha)* [163]

Peculiar relation is an occurrence-exacting relation of complete occurrence. We have seen that it may also be called a particular qualification relation, for when x resides by P in y, x qualifies y. Two types of peculiar relation are especially important in Navya-nyāya: (1) the positive relation between an imposed property or relational abstract and its locus (cf. § 15), and (2) the negative relation between an absence and its locus (cf. § 29). Many other relations are also said by the Navya-naiyāyikas to be types of peculiar relation, e.g., the relation between describer and described (cf. *N.K., s. v.* nirūpakatvam).

The sense of both peculiar relation and inherence is conveyed by the genitive case ending.[164] This is to say, inherence and peculiar relation between them correspond to the membership relation ('ϵ') of mathematical logic or the predication of Aristotle.

It is worth noting that Navya-nyāya does not confuse, as Aristotle does, the predicate of members of a class with the predicate of the class itself. Aristotle would hold that in the statement

[157] This is a clumsy theory with little except its antiquity to recommend it. As Śaṅkarâcārya long ago pointed out (*Brahma-sūtra-bhāṣya*, II, 2.13), if inherence is required to join contact to the objects in contact, why should not another entity be required to join inherence to contact?

[158] *S.M.*, 11; *B.N.*, p. 9; Sen, p. 20; Keith, pp. 196–8.

[159] Raghunātha denies this; cf. § 13.

[160] According to Raghunātha, it need not be of complete occurrence; cf. note on § 45.

[161] *Bh.P.*, 24. To this there is an exception. These substances can inhere in *mahā-kāla* (universal time as opposed to worldly time).

[162] Raghunātha denies this; cf. § 50 below.

[163] Sen, pp. 20, 21. For criticism of this concept by other schools, cf. Radhakrishnan, II, pp. 54–55.

[164] Cf. *N.K.*, *s. v.* ṣaṣṭhi.

(1) 'All men are mortal'
mortality is predicated of the class of all men, just as in
(2) 'Socrates is wise'
wisdom is predicated of Socrates. But in Navya-nyāya (2) would be represented by: 'Socrates is a locus of wisdom by inherence', whereas (1) would be represented by: 'mortality pervades humanity', i.e., 'every locus of man-ness by H is a locus of death-ness by P.

The distinctions between H and P correspond to the distinctions between a property and a generic character. The classical distinctions are three: (1) P may subsist between single entities; (2) each case of P is a separate relation, whereas H is one; (3) as a corollary to (2), P is transient while H is eternal.

The idea of the unity of inherence is an old one. It arises from an inability to distinguish between an instance, e.g., 'pot-ness inheres in pots', and an abstraction: 'the relation of any element x to any element y such that x inheres in y'. Raghunātha deserves credit for having pointed out this confusion. If the traditional theory were true, those entities which inhere would all inhere in each entity that is inhered in.[165] Raghunātha makes no distinction between H and P.

51. *Paryāpti* Relation (*paryāpti-sambandha*) [166]

Perhaps the most interesting relational concept of the Navya-naiyāyikas is that of *paryāpti*. It bears a close resemblance to the recent concept in Western logic of number as a class of classes, but let us explain it first from the Indian point of view.

The old theory held that number was a quality; like other qualities it inhered in its loci. Considering the relation between two-ness (*dvitva*) and two pots, the older logicians said that two-ness inhered both in the first pot and in the second, for inherence was defined as a relation between one entity and several entities.

The new theory points out that there are two sorts of two-ness. One of these is a generic character inhering in each member of pairs. The other sort of two-ness is an imposed property. It is related by what is called '*paryāpti*' not to the members of pairs but to the pairs themselves.[167] It is the property which allows us to say that the loci of two-ness and of three-ness are mutually exclusive.[168]

[165] As Raghunātha puts it in the *P.T.N.*, p. 76, water would smell. Scent is supposed to be a quality peculiar to earth. Cf. also Kālīpada *Sūktidīpikā*, p. 38, last four lines. In his *Bhāṣya-tātparyya* (p. 41) the editor offers an interpretation of the traditional theory that avoids the fault pointed out by Raghunātha.

[166] *B.N.*, p. 12; *N.K.*, *s. v.* paryāpti; Śiv. Miśra, pp. 80–81.

[167] "Two-ness, three-ness, etc., are related by *paryāpti* only to two, three, etc., not to each of the two or of the three. They are related to each by inherence." *N.K.*, p. 490, lines 7–8.

[168] "And this *paryāpti* is a sort of Peculiar Relation giving rise to the concepts: 'This is one pot', 'These are two pots', etc. Three-ness, etc., does not occur in the same loci as two-ness,

According to Maheśa Chandra, '*paryāpti*' is to be interpreted as meaning 'completion', 'thoroughness', 'wholeness' (*paryavasānam, sākalyam*). *Paryāpti* is the relation by which numbers reside in wholes rather than the particulars of wholes.

This theory that numbers subsist by *paryāpti* in effect points out what Frege first pointed out in Europe in the nineteenth century.[169] The 'two-ness that inheres in each member of pairs' corresponds to the Western 'class of two members'. The 'two-ness that is related by *paryāpti* to the pairs and not to the members of the pairs' corresponds to the Western 'number two, the class of all classes of two members'.

But the theory of numbers subsisting by *paryāpti* does not play the important role in the Nyāya system that Frege's theory plays in modern logic. The Indians developed the theory largely to solve a contradiction in their system of categories.[170] After they had solved the contradiction they used the theory, it is true, to guard against a type of sophistry which we shall take up in § 52, but they never used their theory to open up new fields of logic in the way Russell and others have used Frege's.[171]

I cannot say whether Raghunātha invented or accepted from older writers the theory of *paryāpti* as set forth above. Not all Naiyāyikas followed him. One cannot tell from Mathura's *V.P.R.* whether Mathura accepts the theory or not. He treats it simply as a theory that some people use (*V.P.R.*, 79.2–81.4). Of Jagadīśa and Gadāhara (seventeenth cent.), the two greatest teachers of the school after Raghunātha, the first accepted and the second modified it considerably. A summary of their views is given by Śivadatta Miśra, p. 82.

52. *Vyāsajya-vṛtti* Properties (*vyāsajya-vṛtti-dharmāḥ*)

Such properties as two-ness, three-ness, etc., correspond to the Western classes of classes. The Naiyāyikas indicate the peculiar nature of these properties not

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etc." Raghunātha, *R. Jāg.*, I, p. 262. Compare with this Frege's definition of number: "Die Anzahl, welche dem Begriffe F zukommt, ist der Umfang des Begriffes 'gleichzahlig dem Begriffe F'." G. Frege, *Die Grundlagen der Arithmetik* (Breslau, 1884), pp. 79–80.

[169] Cf. Quine, p. 238.

[170] According to *Vaiśeṣika-sūtra*, 1/1/16, quality can only inhere in substances. Number is defined as a quality. How can one explain such a phrase as 'four qualities'? The concept of *paryāpti* offers a way out of the dilemma. Cf. *N.K.*, *s. v.* paryāpti, p. 490, lines 10–12.

[171] Gadādhara, it is true, developed the *paryāpti* theory, but along rather different lines. He used the *paryāpti* relation in defining the extent of limitor$_1$. A *sādhya*$_1$ may have more or fewer limitors, or its limitors may or may not extend to the whole of the generic character. Gadādhara and his followers speak of a limitor$_2$ (*avacchedakatātva*) that is connected with the extent of the limitors by *paryāpti*. By the frequent insertion of such *paryāpti* relations into the formulae defining pervasion, they achieve a greater exactness of definition. The origins of this technique may be found in Raghunātha (e.g., *R. Jāg*, I, 128, line 4), but its final complication is due to Gadādhara.

only by conceiving of a special relation, *paryāpti,* in which they stand to their loci, but by calling them *vyāsajya-vṛtti* properties, that is, properties that occur in loci (e.g., $a \cup b$) whose parts (a, b) adhere to each other (i.e., are inseparable).

The term *vyāsajya-vṛtti-dharma* is usually mentioned in connection with a special sort of sophistry which consists in substituting 'different from $2x$' for 'different from x'. An example will make this usage clear.

The absence '$\dot{-}$ mango' (*āmrânyonyâbhāvaḥ*) is a mutual absence the counterpositive-ness to which is limited by mango-ness (*āmratvâvacchinna-pratiyogitākâbhāvaḥ*).

The absence '$\dot{-}$ two mangoes' (*āmradvayânyonyâbhāvaḥ*) is a mutual absence-the counterpositive-ness to which is limited by the *vyāsajya-vṛtti* property twoness (*vyāsajya-vṛtty-ātmaka-dvitvâvacchinna-pratiyogitākâbhāvaḥ*). It is likewise a mutual absence which occurs in its counterpositive (*sva-pratiyogi-vṛtty--anyonyâbhāvaḥ*), for mango number one is part of the counterpositive of $\dot{-}$ two mangoes and $\dot{-}$ two mangoes occurs in mango number one.

Whenever a definition employs the term 'mutual absence' the Nyāya commentators find it necessary to insert one of two phrases to prevent the sophistical substitution of '$\dot{-}2x$' for '$\dot{-}x$': '*vyāsajya-vṛtti-dharmânavacchinna-pratiyogitākâbhāvaḥ*' (a mutual absence the counterpositiveness to which is not limited by a *vyāsajya-vṛtti* property), or '*sva-pratiyogy-avṛtty-anyonyâbhāvaḥ*' (a mutual absence which does not occur in its own counterpositive). For an example see *V.P.R.*, 93.5–8.

53. Temporal Relation (*kālika-sambandha*)[172]

Temporal relation is of two sorts, direct (*sākṣāt*) and indirect (*paramparayā*). Time is considered to be a single, formless, eternal substance. Everything resides directly in time by a temporal relation. Time thus acts exactly like space (*dik*) in that it is a substratum for all entities. This is a reasonable deduction from syntax: '*asmin māse varṣaḥ* (rain in this month)' shows the same syntactical relation as '*Vaṅgadeśe varṣaḥ* (rain in Bengal)'.

Direct temporal relation. Direct temporal relation is itself of two sorts. The first is the relation by which all entities, eternal and noneternal, reside directly in universal time (*mahā-kāla*). This relation is of little importance to logic. The second is the relation by which all noneternal entities reside directly in a portion of time. This is the relation between rain and this month. Now a portion of time is an imposed property (*upādhi*)[173] on time, for time itself is eternal and formless. Its imposed properties are calibrations furnished by actions, contacts, and

[172] *B.N.*, p. 11. Sen's explanation (p. 21) differs in some respects from mine.

[173] Notice that here the meaning of 'imposed property' differs somewhat from its meaning in § 15. Its meaning here is its usual meaning is Vedānta.

disjunctions.[174] For example, portions of time can be set by the motion of the sun across a line. The sun moves, joins, and leaves the line. Thus the relation between rain and this month, while called a direct temporal relation, can be analyzed as an indirect relation of a different sort between rain and an imposed property of time through the substances in which that property directly resides.[175] This relation, while important in Navya-nyāya physics, will not concern us much here.

Indirect temporal relation. There is also an indirect relation between entities through time. Strictly speaking, this is also of two sorts, the *tertium relationis* being in the first case universal time and in the second case a portion of time. However, little use is made by the Naiyāyikas of the first type. What they regularly mean by temporal relation (*kālika-sambandha*) is the second type of indirect temporal relation, that is, the relation between *a* and *b* when both *a* and *b* reside in a division of time. Since the division of time may be of any size short of the whole of time, all entities other than eternal ones are related to each other by this relation. It is quite inexplicable to me why the Naiyāyikas regard this relation as occurrence-exacting.[176]

To this indirect temporal relation the Navya-naiyāyikas give far more attention than it seems to a Westerner to warrant. The use of such a relation allows the construction of an infinite number of apparent paradoxes. For example, smoke and a lake occur in the same division of time, so one may say that smoke occurs in a lake by (indirect) temporal relation. More than this, since the constant absence of smoke, although in itself eternal, still as an object of knowledge is noneternal unless the knowledge be God's, one may say also that the constant absence of (cognized) smoke occurs in a lake by the same relation by which its presence occurs there.[177] Perhaps a fuller knowledge of Navya-nyāya will show that these paradoxes serve some purpose other than the obvious one of confusing the layman.

54. Relation Where the Locus$_1$ is Described by a Qualified Entity (*viśiṣṭa-nirūpitâdhāratā-sambandha*)

This exotic relation is useful in solving the dilemma occasioned by the essential identity of a pure entity with a qualified one.

[174] Cf. *S.M.*, 46.

[175] Actually the relation is still more complicated than this, since a month is formed by the addition of billions of sets of the four ultimate moments (*kṣaṇa*). These are the smallest possible imposed properties of time, one mgiht say the atomic properties.

[176] *B.N.*, p. 11, note 2 specifically states that this relation, although indirect, is occurence-exacting. Usage regularly conforms to this statement, e.g., 'fire occur(s) in a lake by temporal relation'. Indirect relations other than this, at least in theory, are non occurrence-exacting (*B.N.*, p. 11, line 10).

[177] I take the explanation of this argument from Sen, p. 21.

Take the inference:

(1) '[It] possess(es) substance$_1$ because [it possess(es)] reality qualified by otherness than quality or action'.

One method of showing this inference to be true has been given (§ 41). Another is to state that qualified reality is not pervaded by substance$_1$ by the relation inherence at all (cf. § 23, note 82) but by our exotic relation-where-the-locusness-is-described-by-a-qualified-entity. In this case, (1) will be false unless it is interpreted to mean:

(2) 'It possess(es) substance$_1$ because it possess(es) by relation L reality qualified by otherness than quality or action'.

where 'L' represents our exotic relation. Now *h* in the form of pure reality is related only by inherence, not by L, so if (1) is interpreted as (2) there is no harm even if pure reality does occur by inherence in a locus of $-s$; the inference is still valid.

55. Non Occurrence-Exacting Relations

The non occurrence-exacting relations mentioned in the texts following are few and readily understandable from what has preceded. One should note, however, the peculiar method in Sanskrit of naming these relations. They are regularly named from the name of the abstract property residing in the second term of the relation.[178]

Pervader relation (*vyāpyatva-sambandha*: literally pervadedness-relation) — the relation of x to y such that x pervades y.

Nonpervader relation (*avyāpyatva-sambandha*: literally, non-pervadedness-relation) — the relation of x to y such that x does not pervade y.[179]

Container relation (*viṣayatva-sambandha*: literally, content-ness-relation) — the relation of a knowledge x to y such that y is the content of x.

Content relation (*viṣayitva-sambandha*: literally, content-possessorness-relation) — the relation of x to knowledge y such that x is the content of y.

Relation of essential identity — cf. § 39.

56. Definition (*lakṣaṇa*)

The Navya-nyāya method of explaining a definition is to give a series of objections to it. Each objection purports to show a fault in the definition, and is followed by a rebuttal if the fault is only apparent, or, if the fault lies in a lack

[178] This terminology may also be used in the case of the occurrence-exacting relations noticed above. Thus, pot's relation to ground may be termed, instead of '*saṃyoga* — contact', '*sva-saṃyuktatva-sambandha*' — literally, 'a relation of contacted-ness [residing in ground] to itself [the pot]'. In such expressions '*sva*' always refers to the first term of the relation.

[179] Śiv. Miśra (p. 40) claims that sometimes a nonpervader relation may be occurrence-exacting.

of precision, by a filling in (*niveśana*) of the definition, that is, by limiting or qualifying one of its terms or relations.

Definitions are said to be liable to three faults: [180]

(1) overpervasion [181] (*ativyāpti*), where that which is expressed by the definition is so wide as to pervade more than the element to be defined, e.g., 'Cattle are horned beasts';

(2) nonpervasion (*avyāpti*), where the definition is too narrow, so that part of the element to be defined is not pervaded by that which is expressed by the definition, e.g., 'Cattle are spotted beasts';

(3) impossibility (*asambhava*), where that which is expressed by the definition does not coincide at all with the element to be defined, e.g., 'Cattle are solid-hoofed beasts'.

It will be seen that these faults are essentially the same as the traditional *hetv-ābhasa's* or fallacies of the *hetu*.[182] This is what one might expect, for definitions are essentially reasons (*hetavaḥ*). They are reasons by which one distinguishes what does not belong in the defined area from what does. The usefulness of a definition lies in its acting as a *hetu* in negative inferences.[183]

There is what is really a fourth fault, although it is usually assigned to the second of the above three. This is *aprasiddhyâvyāpti*, nonpervasion because one of the terms is unexampled. In the definition 'pervasion is the generic absence of occurrent$_1$ in the *hetu* to a locus of absence of the *sādhya*', this fault arises if cases can be shown where there is no example of absence of the *sādhya*, etc. This is a fault, since a definition with an unexampled term is useless; one cannot effect negative inferences by means of it.

There is a more basic reason why Naiyāyikas avoid unexampled terms in general. Not only do they render definitions useless, but they cannot be elements of valid knowledges. This has been explained above (§§ 7, 33).

57. Negations of Self-Contradictories [184]

The negation of a self-contradictory might be called a sub-variety of the fault of unexampled term; it also is a fault to be avoided not only in definitions but in all expressions. Navya-nyāya speaks to two sorts of negations of self-contradictories:

(1) An absence describing a counterpositive$_1$ limited by a contradictory property (generic character or imposed property) (*vyadhikaraṇa-dharmâvacchi-*

[180] *N.K.*, *s. v.* lakṣaṇâbhāsaḥ; Keith, pp. 153–154, Radhakrishnan, II, p. 47.

[181] By 'pervasion' is here meant that special type of pervasion where pervader (here = definiens) and pervaded (here = definiendum) are equal (coextensive).

[182] This is noticed by Keith, p. 153.

[183] "*lakṣaṇasya kevala-vyatireki-hetutve prayojanam,*" *N.K.*, *s. v.* lakṣaṇam.

[184] Sen, pp. 26–27.

nna-pratiyogitā-nirūpakâbhāva). An example is: 'absence of pot limited by cloth-ness (*paṭatvâvacchinna-ghaṭâbhāva*)'. Here cloth-ness is contradictory to (or in the Nyāya phrase 'occurs in different loci from') the counterpositive, pot.

(2) An absence describing a counterpositive$_1$ limited by a contradictory relation (*vyadhikaraṇa-sambandhâvacchinna-pratiyogitā-nirūpakâbhāva*). An example is: 'absence of quality limited by contact (*saṃyoga-sambandhâvacchinna-guṇâbhāva*)'. Quality can only inhere; it is never related by contact. Thus, contact is contradictory to (occurs in different loci from) the counterpositive, quality. Another example is: 'absence of soul as limited by (indirect) temporal relation', for soul, being eternal, does not enter into indirect temporal relation.[185]

Negations of self-contradictories are said to have been allowed by a logician named Sondada.[186] The first sort is expressly disallowed by Gaṅgeśa.[187] The second sort also, in the form shown by the examples above, is regularly avoided by the Navya-naiyāyikas. However, it is permitted to split a self-contradictory of the second sort into two self-consistent terms and negate the contradictory compound.[188]

An example of splitting a self-contradictory is furnished by Mathura, *V.P.R.*, 47.1–2, where 'absence of soul as limited by temporal relation' is changed to 'absence of qualificand$_1$ in a valid knowledge of which soul-ness is the chief qualifier, the counterpositive$_1$ to this absence being limited by temporal relation (*kālika-sambandhâvacchinna-pratiyokitākâtmatva-prakāraka-pramā-viśeṣyatvâbhāva*)'. To explain: In the valid knowledge, 'this (is) a soul', soul is the qualificand, and its qualifier, soul-ness, is the chief qualifier of the knowledge. We may say that the qualificand$_1$ resident in soul, and the qualifier soul-ness are each a part of this valid knowledge. Now the parts of Mathura's compound absence are:

(1) Absence of qualificand$_1$, the counterpositive$_1$ to which absence is limited by temporal relation. Examples both of this absence and of that which it negates can be found.

(2) A valid knowledge in which the chief qualifier is soul-ness. This knowledge is exampled.

These two parts are combined to form a compound absence which is also

[185] To be specific, it does not enter into indirect temporal relation of type two (where the *tertium relationis* is a division of time).

[186] Mathura, *T.C.*, IV, 1, p. 202, line 1; IV, 2, p. 276, line 1; Sen, p. 27; *N.K.*, *s. v.* vyadhikaraṇadharmâvacchinnavādi. His name is spelled in various ways. Cf. Gopīnāth Kavirāj, *Sondala Upādhyāya*, Princess of Wales Sarasvatī Bhavana Studies, II, p. 199.

[187] Gaṅgeśa, *T.C.*, II, 54, "A property which does not occur in the counterpositive cannot limit the counterpositive$_1$ (*pratiyogy-avṛttiś ca dharmo na pratiyogitâvacchedakaḥ*)."

[188] This statement and the rest of § 57 are based on Mathura's practice. I cannot say just how far the practice of other Navya-naiyāyikas agrees with his in this respect.

exampled. The counterpositive to this compound absence of course is unexampled, but this, quite reasonably, is not considered a fault.[189]

More complicated examples of splitting a self-contradictory term are furnished by Mathura's eleventh insertion and by the second variant interpretation of Gaṅgeśa's First Definition. These will be explained in Section IV.

In the *V.P.R.* Mathura does not expressly place any restriction on this technique of splitting self-contradictories. Perhaps he does so elsewhere, for it can lead to strange results. For example, the second alternate interpretation (*V.P.R.*, 83) enables Gaṅgeśa's First Definition to fit pervasions with universal-positive *sādhyas*, a possibility that was either not considered or not approved by Gaṅgeśa.

58. The Suffixes *-ka and -īya*

It is often unnecessary to state specifically that *a* describes *b*. Instead of saying '*ghaṭatvâvacchinna-pratiyogitā-nirūpakâbhāvaḥ* — an absence describing a counterpositive$_1$ limited by pot-ness', one may say '*ghaṭatvâvacchinna-pratiyogitākâbhāvaḥ* — an absence where the counterpositive$_1$ is limited by pot-ness'. The suffix *-ka* simply enables the noun to which it is attached to modify another noun. This suffix may do duty for '*nirūpaka*' as in the example above, but it may indicate a relation less specific than this. Further examples are:

1. '*ātmatva-prakāraka-pramā*' (*V.P.R.*, 47.2) — 'a valid knowledge where the chief qualifier is soul-ness'.

2. '*avyāpya-vṛtti-sādhyaka-sad-dhetau*' (*V.P.R.*, 59.1–3) — 'where a correct *hetu* is accompanied by a *sādhya* of incomplete occurrence'.

3. In *V.P.R.*, 42.6–7 the counterpositive$_1$ to — —*s* is specified as being '*svânirūpaka-sādhyaka-bhinna*' — 'different from one where the *sādhya* does not describe it'.

The suffix *-īya* is also used to abbreviate longer expressions. In the texts here printed it is regularly equivalent to '*nirūpita*'. Examples are:

1. '*sādhyīya-pratiyogitâvacchedaka*' (*V.P.R.*, 47.5) — 'the limitor of the counterpositive$_1$ to the *sādhya*' (= '*sādhya-nirūpita-pratiyogitâvacchedaka*').

2. '*sādhya-sāmānyīya-pratiyogitâvacchedaka-sambandhena*' (*V.P.R.*, 41.6) — 'by the relation which limits the counterpositive$_1$ to the whole of the *sādhya*'.[190]

3. '*tadīya-pratiyogitā*' (*V.P.R.*, 32.3) — 'counterpositive$_1$ to this'.

4. '*abhāvīya-pratiyogitā*' — cf. § 28.

Where the Sanskrit abbreviates '*nirūpita*' to the suffix '*īya*', I usually abbreviate 'described by' to the word 'to'.

[189] Cf. § 32, note 113, end.

[190] Cf. § 16, note 50.

59. Symbols

(1) Symbols for Navya-nyāya.

Terms

s	'*sādhya*' (§ 9)
h	'*hetu*' (§ 9)
p	'*pakṣa*' (§ 9)
c	'counterpositive' (§ 28)
l	'locus' (§ 18), as in ls, locus of the *sādhya* $l - s$, locus of absence of the *sādhya*

Relations

C	'contact' (§ 48) or 'is in contact with'
H	'inherence' (§ 49) or 'inheres in'
P	'particular qualification positive or absential (negative)' (§ 50) or 'is related by particular qualification to'
$\overline{\text{P}}$	'absential particular qualification' (§ 29) or 'is related by absential particular qualification to'
T	'indirect temporal relation where the *tertium relationis* is a division of time' (§ 53) or 'is related by indirect temporal relation to'
$\doteq$	'is esentially identical with' (§§ 39, 40, 41, 42)

Absences

$-$	'constant absence (of)' (§ 27)
$\dot{-}$	'mutual absence (of)' (§ 27)

The symbols '$-s$' and '$-h$' are exceptional. Thus, '$-$s' may refer either to constant or mutual absence of the *sādhya* (see notes to *V.P.R.*, 29.1–4); '$-h$' may refer either to constant or mutual absence of the *hetu* (see notes to *V.P.R.*, 96.3–5).

Abstracts

Abstracts are indicated by subscripts (§ 20); e.g.,

c_1	'counterpositive-ness' (§ 28)
o_1	'occurrent-ness' (§ 20)
l_2	'locus-ness-ness'

Limitors and Describers (§§ 34, 20, 22)

⌜fire$_1$, C⌝ s_1	'*sādhya*-ness limited by fire-ness and contact'
o_1 ⌞mountain⌟	'occurrent-ness described by mountain'
gh_1	'limitor(s) of the *hetu*-ness' (§§ 25, 28)
gs_1	'limitor(s) of the *sādhya*-ness' (§§ 25, 28)
Rh_1	'limiting relation of the *hetu*-ness' (§ 23)

Rs_1	'limiting relation of the *sādhya*-ness' (§ 23)
( )	Parentheses distinguish knowledges from statements in the manner explained in § 7.

(2) Symbols of Mathematical Logic.

These are used only in a few examples given in Section II. The following list of their readings should suffice to explain these examples; for exact definitions, see Quine.

'$\sim x$' may be read	'not x' (§ 27)
'$\sim$ (x loves y)'	'it is false that x loves y'
'$x \cdot y$'	'x and y' (§ 35)
'$x \vee y$'	'x or y' (§ 35)
'$\phi \equiv \psi$'	'ϕ is equivalent to ψ' or 'if and only if ϕ, then ψ' (§§ 35, 39)
'$\phi \supset \psi$'	'if ϕ, then ψ'
'ϵ'	'is a member of' (§ 50)
'$a \cup b$'	'the logical sum of a and b' (§ 38)
'$a \cap b$'	'the logical product of a and b' (§ 38)
'(x)'	'for all x'
'$(\exists x)$'	'for some x' or 'there is an x such that'

Parentheses and dots, other than the single dot for 'and', are used to indicate which portion of a formula goes with which. Thus, either '$\phi \supset (\psi \vee \chi)$' or '$\phi \supset \cdot \psi \vee \chi$' may be read 'if ϕ, then ψ or χ.'

SECTION III

GAṄGEŚA'S *VYĀPTI-PAÑCAKA*

TEXT 1,7: Nanv anumiti-hetu-vyāpti-jñāne kā vyāptiḥ? Na tāvad avyabhicaritatvaṃ, tad-dhi na sādhyâbhāvavad-avṛttitvaṃ (1), sādhyavad-bhinna-sādhyâbhāvavad-avṛttitvaṃ (2), sādhyavat-pratiyogikânyonyâbhāvâsāmānâdhikaraṇyaṃ (3), sakala-sādhyâbhāvavan-niṣṭhâbhāva-pratiyogitvaṃ (4), sādhyavad-anyâvṛttitvaṃ (5) vā, kevalānvayiny abhāvād iti.

TRANSLATION: But now, in [that] knowledge of a pervasion which is the cause of an inference, what is pervasion? It is not simply nondeviation [of *h* with respect to *s*], for it is not that [nondeviation defined as] (1) "nonoccurrent$_1$ [of *h*] to the locus of absence of *s*," nor [that defined as] (2) "nonoccurrent$_1$ [of *h*] to the locus of that absence of *s* [which absence occurs] in what is different from a locus of *s*," nor (3) "[*h*'s] having a different locus from that of a mutual absence whose counterpositive is a locus of *s*," nor (4) "[*h*'s] being the counterpositive of an absence which resides in all loci of absence of *s*," nor (5) "nonoccurent$_1$ [of *h*] to what is other than the locus of *s*," since it is not any of these where *s* is universal-positive.

NOTES: For the general form of Gaṅgeśa's argument, see II, § 38. For the expression 'nonoccurrent$_1$ to,' see II, notes 74 and 96. Of Definition 2 the above translation indicates the Navya-nyāya interpretation (see Mathura, 88.1–3 below). Definition 4 likewise is translated in accordance with Mathura's interpretation (95.3 ff.).

Section IV

MATHURĀNĀTHA'S *VYĀPTI-PAÑCAKA-RAHASYA*, BEING HIS COMMENTARY ON GAṄGEŚA'S *VYĀPTI-PAÑCAKA*

Introduction

TEXT 1.1–4.1 (BI.27.1–4):* Anumāna-prāmāṇyam nirūpya vyāpti-svarūpa-nirūpaṇam ārabhate nanv ity-ādina. Anumiti-hetv-ity asyânumāna-niṣṭha-prāmāṇyânumiti-hetv ity arthaḥ. Vyāpti-jñāna ity atra ca viṣayatvaṃ saptamy-arthaḥ, tathā cânumāna-niṣṭha-[1]prāmāṇyânumiti[1]-hetu-vyāpti-jñāna-viṣayībhūtā vyāptiḥ kêty arthaḥ.

VARIANT: (1) BI., -pramāṇyânumiti-.

TRANSLATION: After describing the validity of the inferential means, [Gaṅgeśa] begins to describe the nature of pervasion with the words, "but now, etc." By "the cause of an inference" he means the cause of the inference as to the validity of the inferential means. "Knowledge of a pervasion" is in the locative case, for [pervasion] is its content. Thus the meaning is, "What is the pervasion that is the content of that knowledge of pervasion which is the cause of an inference as to the validity of the inferential means?"

NOTES: In the section of the *T.C.* immediately preceding this, Gaṅgeśa has refuted the view that the inferential means is not a valid means of knowledge. Thus, he has described (*nirūpya*) or told us about the validity of the inferential means, but, as Gadādhara points out, he has not yet given a complete discussion (*parīkṣā*) of the topic. A complete discussion consists not only in refuting the views of opponents but in establishing one's own.

If one would prove the universal validity of the inferential means, one must prove it by inference. The inference as to the validity of the inferential means is given by Śiv. Miśra, 3.20 in the following form: *anumānaṃ pramāṇaṃ pramiti-kāraṇatâvacchedaka-rūpavattvāt* — 'the inferential means (is) a valid means of knowledge because it possess(es) the nature of a limitor of the cause$_1$ to valid knowledge,' i.e., valid knowledge cannot arise without the inferential means; cf. II, § 22 (4). To effect the above inference, one must have a knowledge of a certain pervasion. According to Mathura, it is to such a pervasion that Gaṅgeśa refers in his opening sentence.

* The numbers refer to page and line of the Kashi and BI. editions.

'ity atra ca viṣayatvaṃ saptamy-arthaḥ': In the text of Gaṅgeśa, *'vyāpti--jñāne'* is in the locative case because it is to be construed with the nominative *'vyāptiḥ'* by a container relation. That is, the entity expressed by *'vyāptiḥ'* forms the content of the knowledge referred to by *'vyāpti-jñāna'*; cf. II, § 55.

TEXT 4.1–4 (BI. 27.5–7): Anumāna-niṣṭha-prāmāṇyânumiti-hetv ity anena vyāpter anumāna-prāmāṇyôpapādakatva-kathanād anumāna-prāmāṇya-nirūpaṇânantaram vyāpti-nirūpaṇa upodghāta eva[1] saṅgatiḥ sūcitā[1]. Upapādakatvaṃ câtra jñāpakatvam.

VARIANT: (1) BI., saṅgatir iti sūcitam.

TRANSLATION: By the words, "[the pervasion which is] the cause of the inference as to the validity of the inferential means," we indicate that the pervasion gives rise to the validity of the inferential means. Hence, the connection between the present description of pervasion and the preceding description of the validity of the inferential means is shown to be an *upodghāta* connection. 'Gives rise to' means 'gives rise to the knowledge of'.

NOTES: Between every two statements or sections of a discourse there must be some connection or relevancy. This is called *saṅgati*. Discourse without relevancy is nonsense. *Saṅgati* is divided into six types which are listed in the following verse (*N.K.*, *s. v.* saṅgatiḥ):

Sa ca prasaṅgôpodghāto hetutâvasaras tathā
Nirvāhakaikya-kāryaikye ṣodhā saṅgatir iśyate.

The second type, *upodghāta*, is said to be *upapādakatva-rūpa* or *jñāpakatva--rūpa*, i.e., in the form of a case where A gives rise to the knowledge of B.

Jñāpakatva is more exactly defined as *'svaviṣayaka-jñāna-janaka-jñāna-viṣayatvam'*, i.e., A's being the object of a knowledge, which knowledge gives rise to a knowledge of B. Thus smoke is *jñāpaka* of fire. In the present case, pervasion is *jñapaka* of the inference as to the validity of the inferential means, for a knowledge of the former gives rise to a knowledge of the latter (cf. II, § 3, last paragraph). Hence the present section is relevant.

TEXT 6.1–3 (BI. 27.8–11): Kecit tu anumiti-padam anumiti-niṣṭhêtara--bhedânumiti-paraṃ, tathā cânumiti-niṣṭhêtara-bhedânumitau yo hetuḥ prāg--ukta-vyāpti-prakāraka-pakṣa-dharmatā-jñana-[1]janya-jñānatva[1]-rupas tad-ghaṭakaṃ yad vyāpti-jñanaṃ tad-aṃśe viśeṣanībhūtā vyāptiḥ kêty arthaḥ.

VARIANT: (1) BI., -janyatva-.

TRANSLATION: But some say that the word 'inference' means the inference to the effect that there resides in inference a difference from what is other [than inference]. In this inference, viz., 'inference is different from what is other [than inference]', the *h* is in the form of the [definition of inference] previously given [by Gaṅgeśa, *T.C.*, II, 2], viz., 'a knowledge born of a [former] knowledge of the nature of a *pakṣa,* in which [former knowledge] a pervasion is the chief qualifier'. Now 'pervasion' is a qualifier in the element 'knowledge of a perva-

sion' and this element goes to make up [i.e., is a stage necessarily preceding] this *h*. Gaṅgeśa means to say 'What is *this* pervasion?'

NOTES: One purpose of a definition is to distinguish the thing defined from everything else. Thus, for valid definitions, the following inference will be true: *lakṣya itara-bhedavān tādṛśa-lakṣaṇāt* — 'the defined (is) different from anything else, because [it possess(es)] such a definition'. If one takes 'inference' for the *pakṣa*, one may form the following inference: *anumitir anumitîtara-bhedavaty anumiti-lakṣaṇāt* — 'an inference possess(es) difference from what is not an inference, because [it possess(es)] the definition of inference'. Here *h* is the definition of inference, which has been given by Gaṅgeśa (cf. II, § 6 — Gaṅgeśa's wording differs slightly from Mathura's quotation here). This *h* (definition of inference) presupposes the previous stages of operation and instrumental cause. Knowledge of pervasion is the instrumental cause, and it is to *such* a pervasion, according to some interpreters, that Gaṅgeśa refers in his opening sentence.

TEXT 6.3–5 (BI. 27.11–12): Ghaṭakatvârthaka-saptamī-tatpuruṣa-samāsāt tathā ca prāg-uktânumiti-lakṣaṇopodghāta eva saṅgatir anena sucitêty āhuḥ.

TRANSLATION: They say further that the compound [*anumiti-hetu-vyāpti-jñāna* — knowledge of the pervasion in (i.e., which goes to make up) the *h* to (the *s*) inference] is a *tatpuruṣa* (dependent compound), in which '*anumiti-hetu*' is to be understood as a locative in the sense of something being included in it, and that accordingly the relevancy is indicated as *upodghāta*, [for pervasion goes to make up, i.e., is *upodghāta*] of the aforesaid definition of inference.

TEXT 7.1–2 (BI.28.1–2): Na tāvad iti. Tāvad vākyâlaṅkāre. Avyabhicaritatvam avyabhicaritatva-śabda-pratipādyam.

TRANSLATION: '*Na tāvat*': '*tāvat*' serves as an ornament of speech. '*Avyabhicaritatvam*': the sense immediately conveyed by the word *avyabhicaritatva*.

NOTES: For *avyabhicaritatva* (nondeviation), cf. II, § 33. The Pāṇinian system of grammar explains the nominative case ending not as showing a relationship (the nominative relationship is shown by the verbal inflection), but as giving merely the *prātipadikârtha* — the sense immediately conveyed by the word, or this combined with gender, measurement, or number. Cf. Pāṇini, 2.3.46, *Siddhānta-kaumudī* 532.

TEXT 7.2–6 (BI. 28.2–7): Tatra hetum āha tad-dhîty-ādi. Hi yasmāt, tad avyabhicaritatva-śabda-pratipādyam, nêti sarvasminn eva lakṣaṇe sambadhyate, tathā ca vyāptir yataḥ sādhyâbhāvavad-avṛttitvâdi-rūpâvyabhicaritatva-śabda-pratipādya-svarūpā na, ato 'vyabhicaritatva-śabda-pratipādya-svarūpā nêty arthaḥ paryavasitaḥ. Viśeṣâbhāva-kūṭasya sāmānyâbhāva-hetutā [1] prasiddhâivêti [2]na nañ-dvayôpādānaṃ[2] nirarthakam.

VARIANTS: (1) BI. inserts ca; (2) BI., ataḥ etan nañ-dvayôpādānaṃ na.

TRANSLATION: Gaṅgeśa gives the reason: '*tad-dhi*' etc. '*Hi*' means because. '*Tat*' means the sense immediately conveyed by the word *avyabhicaritatva*. 'Not'

is to be taken with each definition. Thus the extracted meaning is: since pervasion is not the same as the sense immediately conveyed by 'nondeviation' when this is in the form of 'nonoccurrent$_1$ [of h] to the locus of absence of s' etc., therefore pervasion is not the same as the sense conveyed by 'nondeviation' [in any form]. The use of two negatives is not to no purpose because it is well known that the logical product of specific absences causes a generic absence.

NOTES: For logical product, see II, § 38.

THE FIRST DEFINITION

'SĀDHYÂBHĀVAVAD-AVRTTITVAM'

TEXT: 14.1–5 (BI. 28.7–12) Sādhyâbhāvavad-avṛttitvam iti. Vṛttaṃ vṛttir, bhāve niṣṭhā-pratyayāt. Vṛttasyâbhāvo 'vṛttaṃ vṛtty-abhāva iti yāvat, sādhyâbhāvavato 'vṛttaṃ sadhyâbhāvavad-avṛttaṃ sādhyâbhāvavad-vṛtty-abhāva iti yāvat, tad yatrâsti [1]sa[1] sādhyâbhāvavad-avṛttī matv-arthīyên-pratyayāt, tasya bhāvaḥ sādhyâbhāvavad-avṛttitvaṃ, tathā ca sādhyâbhāvavad-vṛtty-abhāvavattvam iti phalitam iti prāñcaḥ.

VARIANT: (1) BI. omits sa.

TRANSLATION: The Old School analyzed the compound '*sādhyâbhāvavad-avṛttitva*' as follows. '*Vṛtta*' means *vṛtti* (occurrence), the past passive participle being used in the sense of an action noun [Pān, 3.4.70]. '*Avṛtta*' = absence of *vṛtta*, i.e., absence of *vṛtti* (occurrence). '*Sādhyâbhavavad-avṛtta*' = *avṛtta* (absence of occurrence) in that which possesses an absence of s. '*Sādhyâbhāvavad-avṛttin*' = possessing [i.e., the locus of] *sādhyâbhāvavad-avṛtta*, for the suffix *in* is used to denote possession. '*Sādhyâbhāvavad-avṛttitva*' is the being this [i.e., is the abstraction of *sādhyâbhāvavad-avṛttin*]. Thus, the complete meaning is, "h's being an entity which possesses an absence of occurrence in that which possesses an absence of s."

NOTES: By the Old School, Mathura probably means pre-Raghunātha Nyāya.

TEXT 14.5–8 (BI. 28.12–29.2): Tad asat, na karmadhārayān matv-arthīyo bahuvrīhiś cet [1]tad-artha-pratipatti[1]-kara ity anuśāsana-virodhāt. Tatra karmadhāraya-padasya bahuvrīhîtara-samāsa-[2]paratvāt[2]. Tac câguṇavattvam iti sādharmya-vyākhyānâvasare Guṇa-prakāśa-rahasye[3] tad[3]-Dīdhiti-rahasye ca sphuṭam.

VARIANTS: (1) K., tadapatti; BI., artha-pratipatti; (2) K., parârthapratitvāt; (3) K. omits tad.

TRANSLATION: This is wrong, because it contradicts the rule "a possessive suffix should not be appended to a *karmadhāraya* compound if a *bahuvrīhi* (possessive compound lacking possessive suffix) can give the same meaning", for in this rule the word '*karmadhāraya*' stands for any compound other than a *bahuvrīhi*. [I have made] this clear in [my commentary] *Rahasya* on [Vardha-

māna's] *Guṇa-prakāśa* in the passage beginning '*aguṇavattvam*' à propos of the explanation of common qualities, and also in [my supercommentary] *Rahasya* on [Raghunātha's] *Dīdhiti* on the same [viz., the *Guṇa-prakāśa*].

NOTES: This rule does not occur in Pāṇini nor in the Vārttika. MM. Śrī Kālīpada Tarkāchārya informs me that it is likewise not to be found in the *Mahābhāṣya*. Śiv. Miśra shows that it proceeds from a desire for simplicity. The *bahuvrīhi* compound '*pītâmbara*' 'possessing a yellow robe' may be analyzed in one step, viz., "he, of whom a yellow robe", whereas '*pītâmbaravān*', meaning the same thing, requires a twofold analysis, viz., " '*pītâmbaram*' = (that which is) yellow and (is) a robe; '*pitâmbaravān*' = he whose that (is)".

For the commentaries referred to by Mathura, cf. Section I.

TEXT 17.1–3 (BI. 29.2–4): Avyayībhāva-samāsôttara-padārthena samaṃ tat-samāsâniviṣṭa-padārthântarânvayasyâvyutpannatvāt,[1] yathā[1] bhūtalôpakumbham, bhūtalâghaṭam ity-ādau bhūtala-vṛtti-ghaṭa-samīpa-tad-atyantâbhāvayor apratīteḥ.

VARIANT: (1) BI., ca.

TRANSLATION: [Again the old interpretation is wrong] because you cannot construe with the second member of an *avyayībhāva* (indeclinable) compound another element which is not included in the compound. Thus '*bhūtalôpakumbha*' cannot be understood to mean 'the vicinity of the pot on the ground', nor '*bhūtalâghaṭam*' to mean 'the constant absence of the pot on the ground'.

NOTES: Since Mathura follows this by saying that an *avyayībhāva* compound cannot in any case be further compounded, the above criticism is supererogatory. It is based on the principle that in any compound it is the principal member (*pradhāna-padārtha*) that is construed with the rest of the sentence. As Śiv. Miśra points out, '*ṛddhasya rāja-mātaṅgāḥ*' cannot mean 'the elephants of the rich king'. In this example the second member of the compound is *pradhānya*; in the examples given by Mathura above, as normally in *avyayībhāvas*, the prior members are *pradhānya*.

TEXT 17.3–6 (BI. 29.5–8): Etena vṛtter abhāvo, 'vṛttîty avyayībhāvânantaraṃ sādhyâbhāvavato 'vṛttir yatrêti bahuvrīhir ity api pratyuktaṃ, vṛttau sādhyâbhāvavato 'nanvayâpatteḥ. Avyayībhāva-samāsasyâvyayatayā tena samaṃ samāsântarâsambhavāc ca. Nañ-upâdhy-ādi-rūpâvyaya-viśeṣāṇām eva samasyamānatvena pariganitatvāt.

TRANSLATION: Hereby such an analysis as the following is prohibited: '*avṛtti*' = an *avyayībhāva* compound signifying absence of occurrence (*vṛtti*); after this one forms a *bahuvrīhi* compound meaning 'possessing absence of occurrence in that which possesses absence of *s*'. This is ruled out because it would involve the impossible construing of '*vṛtti*' with '*sādhyâbhāvavat*', and furthermore because an *avyayībhāva* compound, by its very indeclinability, cannot be further com-

pounded, there being a rule that only certain indeclinables, such as *a, upa, adhi,* etc. may be compounded.

NOTES: An outline may help to make clear the foregoing grammatical arguments against the old interpretations of '*sādhyâbhāvavad-avṛttitvam*'.

I. *sādhyâbhāvavad-avṛtta* + possessive suffix *in*.

- (*a*) Portion singly underlined taken as a *tatpuruṣa*.
- (*b*) Portion doubly underlined taken as an *avyayībhāva*.
  - (*a*) is wrong because you cannot add *in* to a *tatpuruṣa* if a *bahuvrīhi* can give the sense just as well.
  - (*b*) is wrong because you cannot construe the second member of an *avyayībhāva* compound, since this is its subordinate member, with anything outside the compound.

II. *sādhyâbhāvavad-avṛtti*

- (*a*) Portion underlined taken as a *bahuvrīhi*.
- (*b*) Portion doubly underlined taken as an *avyayībhāva*.
  - (*b*) is wrong
    - (1) because you cannot construe *vṛtti* with *sadhyâbhāvavat*, and
    - (2) because you cannot compound an *avyayībhāva* compound anyway.

Mathura now gives the modern and, in his opinion, correct interpretation.

TEXT 20.1–4 (BI.29.9–30): Vastutas tu sādhyâbhāvavato na vṛttir yatrêti tri-pada-vyadhikaraṇa-bahuvrīhy-uttaraṃ tva-pratyayaḥ. Sādhyâbhāvavata ity atra nirūpitatvaṃ ṣaṣṭhy-arthaḥ. Anvayaś câsya vṛttau. Tathā ca sādhyâbhāvâdhikaraṇa-nirūpita-vṛtty-abhāvavattvam avyabhicaritatvam iti phalitam.

TRANSLATION: But actually [the compound *sādhyâbhāvavad-avṛttitvam*] is a *vyadhikaraṇa-bahuvrīhi* (a compound in which the component members are differently construed, e.g., *a* is construed with *b*, *b* with *c*) consisting of three words and meaning 'where (there is) not [i.e., possessing no] occurrence in the locus of absence of *s*', followed by the abstract suffix *tva*. 'Locus of absence of *s*' has the sense of the genitive since there is the property [in occurrence] of being described by it, and it should be construed with 'occurrence'. Thus the complete meaning is, "Nondeviation [of *h*] is [its] property of having an absence of occurrence described by the locus of absence of *s*".

NOTES: For description, cf. II, § 20. Notice the peculiar way in which the Naiyāyika says '*nirūpitatvam*' where one might expect '*nirūpakatvam*'. Compare '*viṣayatvam*' in Mathura 1.1–4.1 and the remarks in II, § 55.

For 'the property of having an absence of occurrence described by $l - s$', one may substitute 'absence of occurrent-ness described by $l - s$' (*sādhya-abhāvâdhikaraṇa-nirūpita-vṛttitvâbhāva*, Śiv. Miśra, 22.13–14). Cf. II, § 20, para. 6. Thus we may represent Mathura's interpretation symbolically by: $- o_1 \llcorner l - s \lrcorner \overline{\mathrm{P}} h$

TEXT 20.4–6 (BI.30.1–4): Na ca vyadhikaraṇa-bahuvrīhiḥ sarvatra na sādhur iti vācyam. Ayaṃ hetuḥ, sādhyâbhāvavad-avṛttir ity-ādau vyadhikaraṇa-bahuvrīhiṃ vinā gaty-antarâbhāvenâtrâpi vyadhikaraṇa-bahuvrīheḥ sādhutvāt.

TRANSLATION: One should not object that a *vyadhikaraṇa-bahuvrīhi* is not always proper. This is the reason, that in such cases as '*sādhyâbhāvavad-avṛtti*' etc., since there is no other way [of explaining the compound] than as a *vyadhikaraṇa-bahuvrīhi*, such a *bahuvrīhi* is proper.

INSERTIONS FOR FIRST DEFINITION

TEXT 24.1–3 (BI.30.4–7): Sādhyâbhāvâdhikaraṇa-[1]vṛtty[1]-âbhāvaś ca tādṛśa-[2]-vṛttitva[2]-sāmānyâbhāvo bodhyaḥ, tena dhūmavān vahner ity-ādau dhūmâbhāvavaj- jalahradâdi-[3]vṛtty[3]-abhāvasya dhūmâbhāvavad-vṛttitva-jalatvôbhayatvâdy[4]-avacchinnâbhāvasya ca vahnau sattve 'pi[5] na kṣatiḥ[5].

VARIANTS: (1) BI., -vṛttitva-; (2) BI., -vṛtti-; (3) B.I., -vṛittitva-; (4) K. omits ādy-; (5) BI., nâtivyāptih.

TRANSLATION: Absence of occurrence in the locus of absence of *s* must be understood to mean a generic absence of such occurrent$_1$. Thus, where [there is a false inference] such as '[It] posess(es) smoke because [it possess(es)] fire', there is no fault [viz., overpervasion in the definition] even though there is an absence of occurrence of [the *h*] fire in a [specific] locus of absence of *s* such as a lake, and even though there is in fire such an absence as one limited by the conjunction water-ness and occurrent$_1$ to locus of absence of smoke.

NOTES: Mathura gives an insertion (*niveśana*) or refinement of the definition in order to overcome a possible objection.

Objection 1. As the definition now stands, viz.,

$$- o_1 \llcorner l - s \lrcorner\, \bar{\mathrm{P}}\, h,$$

a false inference will appear true.

Example. '[The] mountain possess(es) smoke because [it possess(es)] fire'.

s:	smoke	$-s$:	$-$ smoke	*h*:	fire
ls:	mountain	$l-s$:	lake	*lh*:	mountain

h does not occur in $l - s$, therefore the inference appears true.

The second part of the objection is more subtle and is explained in II, § 36. Even if we take for $l - s$ a red-hot iron, where fire *does* occur, there will still be in fire

$$-(o_1 \llcorner l - s \lrcorner \cdot \text{water}_1).$$

Insertion 1 removes the objection by requiring the absence of o_1 to be a generic absence. A specific absence of o_1 [i.e., absence of *an* occurrence] as in Objection 1 will not count; *h* must occur in no $l - s$. Cf. II, § 32, example (4) and ff.

TEXT 27.1–3 (BI.30.7–9): [1]Vṛttiś[1] ca hetutâvacchedaka-sambandhena vivakṣaṇīyā, tena vahny-abhāvavati dhūmâvayave jalahradâdau[2] ca[2] samavāyena kālika-[3]viśeṣaṇatâdinā[3] ca dhūmasya vṛttāv api na kṣatiḥ.

VARIANTS: (1) BI., Sādhyâbhāvavad-avṛttiś; (2) BI. omits; (3) BI., viśeṣaṇatayā.

TRANSLATION: By 'occurrence' must be understood occurrence by that relation which is the limiting relation of h_1. Thus, [where there is a valid inference such as 'It possess(es) fire because it possess(es) smoke'] there is no harm [viz., nonpervasion of the definition] even though there *is* an occurrence of [the *h*] smoke, by a relation of inherence, in the particles of smoke, which are loci of absence of [the *s*] fire, and even though there *is* an occurrence of smoke, by [indirect] temporal relation etc., in a lake etc., which is a locus of absence of fire.

NOTES: *Objection 2*. Still, a true inference would appear false.

Example. '[The] mountain possess(es) fire because [it possess(es)] smoke'.

s:	fire	$-s$:	$-$ fire	*h*:	smoke
ls:	mountain	$l-s$:	particle of smoke		
		:	lake		

h H particle of smoke, for substances inhere in their parts (II, § 49).

h T lake (cf. II, § 53).

Unless one limits the relation by which *h* occurs, it *will occur* in $l-s$.

Insertion 2. '*Sambandhena vṛtti*' (occurrence by that relation) is an abbreviation for '*sambandhâvacchinna-vṛttitva*' (occurrent$_1$ limited by that relation). This o_1 must be limited by Rh_1. That is, in the First Definition the c_1 described by $-o_1$ must be limited by Rh_1; cf. II, § 28, example (3) and ff. The relation limiting the h_1 in smoke when fire is *s* is contact; cf. II, § 23, example (4) and ff. By contact smoke does not occur in a particle of smoke nor in a lake.

The inference no longer appears false.

TEXT 29.1–4 (BI.30.10–14): Sādhyâbhāvaś ca sādhyatâvacchedaka-[1]sambandhâvacchinna[1]-sādhyatâvacchedakâvacchinna-pratiyogitāko bodhyaḥ. Tena vahnimān dhūmād ity-ādau samavāyâdi-sambandhena vahni-sāmānyâbhāvavati saṃyoga-sambandhena [2]tat-tad-vahnitva-vahni-jalôbhayatvâdy-avacchinn[2]âbhāvavati ca parvatâdau saṃyogena dhūmasya vṛttāv api na kṣatiḥ.

VARIANTS: (1) BI., -sambandhena; (2) K., tat-tad-vahnitva-jalôbhayatvâvacchinna.

TRANSLATION: Absence of *s* must be understood to mean an absence the counterpositive$_1$ to which is limited by the limiting relation of s_1 and is limited by the [nonrelational] limitor(s) of s_1. Thus, where [there is a valid inference] such as '[It] possess(es) fire because [it possess(es)] smoke', there is no harm even though there *is* an occurrence of smoke by contact on a mountain etc. which

is the locus of a generic absence of fire by a relation of inherence etc., and which is the locus of [specific] absences such as those limited by this or that fire-ness, or by the conjunct fire and water.

NOTES: *Objection 3*. Still, a true inference would appear false.

Example (inference as in preceding note)

s: fire	$-s$: $-$fire	h: smoke
ls: particle of fire	$l-s$: mountain	

Mountain is ls by C, but it is not ls by H. Thus, mountain may appear as $l-s$, and h occurs on mountain. Unless one regulates the relation of s, the inference will appear false.

Objection 4. (Same inference.) Let s be related by C. The inference will still appear false if $-s$ is a specific absence. Let $-s$ be 'absence of Gaṅgeśa's kitchen fire' or let $-s$ be 'absence of the conjunct fire and water' (cf. II, § 36). Then mountain will still be $l-s$.

Insertions 3 and 4. $-s$ must describe a c_1 which is limited by Rs_1 and gs_1. (Note: one could also say the *absence* must be limited by Rs_1 and gs_1; cf. II, § 31.) The limiting relation of the s_1 in fire to smoke is C (cf. II, § 23, example (4) and ff.). Hereby Objection 3 is removed. The limiting property of s_1 in fire to smoke is simply fire-ness, for the concomitance is between fire in general and smoke in general, not between particulars. Gaṅgeśa's kitchen fire is limited by Gaṅgeśa's-kitchen-fire-ness as well as by fire-ness, and therefore under the provision of Insertion 4 cannot be taken as 's' in the expression '$-s$'. This removes Objection 4.

S.M., 68 gives substantially the same four objections and insertions as those which have been mentioned so far by Mathura.

Note on '$-s$'. The expression 'absence of the *sādhya*' (*sādhyâbhāva*) may refer either to a mutual or to a constant absence. The reason will be obvious from the text above. Where s_1 is limited by essential identity, absence of s will be a mutual absence; where s_1 is limited by any other relation, absence of s will be a constant absence. In the text following there are very few examples of s_1 limited by essential identity. Accordingly, it has seemed simpler, if not quite accurate, to borrow the symbol of constant absence, '$-$', rather than invent a new one for the expression 'absence of the *sādhya*' ('$-s$').

TEXT 39.1–3 (BI.30.14–31.3): [1]Nanu tathâpi[1] guṇatvavān jñānatvāt sattāvān jāter ity-ādau viṣayitvâvyāpyatvâdi-sambandhena tādṛśa-sādhyâbhāvavati jñānâdau jñānatva-jāty-āder [2]varttamānatvād avyāptiḥ[2].

VARIANTS: (1) BI., tādṛśa-sādhyâbhāvavattvaṃ ca abhāvīya-viśeṣaṇatā--viśeṣeṇa bodhyaṃ tena; (2) BI., vṛttāv api nâvyāptiḥ.

TRANSLATION: [Objection.] But the definition still will be so narrow as not to

apply where [there is a valid inference] such as '[It] (is) a quality because it (is) knowledge', or '[It] possess(es) reality because [it possess(es)] a generic character'. In the former inference there *is* an occurrence of [the *h*] knowledgeness in knowledge, and knowledge is the locus of such an absence of *s* by content relation, while in the latter inference there *is* an occurrence of generic character in [produced substances, in quality, and in action, which are] loci of such an absence of *s* by nonpervader relation.

NOTES: For the form of the two inferences, cf. II, § 10. '*Tādṛśa-sādhyâbhāvavati*' — 'locus of *such* an absence of *s*': By 'such' is meant an absence fulfilling the requirements of Insertions 3 and 4. The last three occurrences of '*ādi*' have not been translated; see end of note.

Objection 5. Up to the present, the relation of *h* has been regulated (by Insertion 2), and so has the relation of *s* (by Insertion 4), but nothing has been said of the relation between $-s$ and $l-s$. Because of this, many valid inferences will appear false. The definition is then said technically to suffer from nonpervasion; cf. II, § 56.

Example (*a*). Inference: (literally) '[It] possess(es) quality$_1$ because [it possess(es)] knowledge$_1$'.

s:	quality$_1$	$-s$:	$-$ quality$_1$	*h*:	knowledge$_1$
ls:	all 24 qualities (of which knowledge is one) by H	$l-s$:	substances, actions, etc., by $\overline{P}$	*lh*:	knowledge
		:	knowledge, by content-relation		

$-s\ \overline{P}$ substances, actions, etc., but $-s$ is related to knowledge by content relation (cf. II, § 55), for absence of quality may form the content of a knowledge.

Example (*b*). Inference: '[It] possess(es) reality because [it possess(es)] a generic character'.

s:	reality	$-s$:	$-$ reality	*h*:	generic character
ls:	substances, qualities, and actions (cf. II, § 26) by H	$l-s$:	the last four categories by $\overline{P}$	*lh*:	substances, qualities, and actions; cf. II, § 13 (4)
		:	substance, qualities and actions, by nonpervader relation		

$-s\ \overline{P}$ the last four categories, but $-s$ is related to the first three categories by nonpervader relation (cf. II, § 55), for $-s$ does not pervade the first three categories.

By his use of '*ādi*' ('etc.', but I have found it impossible to translate it here without confusion) Māthura indicates that other examples could be given. If one takes other valid inferences (*ity-ādau*), there will be other *hetus* (*jñānatva-jāty- āder*) that seem to occur in other *l* – *s* (*jñānâdau*) by other relations (*viṣayitvâ-vyāpyatvâdi*).

TEXT 40.1–41.3 (BI. 31.3–6): [1]Na ca sādhyâbhāvâdhikaraṇatvam abhāvīya--viśeṣaṇatā-viśeṣa-sambandhena vivakṣitam iti vācyam. Tathā sati[1] ghaṭatvâ-tyantâbhāvavān ghaṭânyonyâbhāvavān vā paṭatvād ity-ādau sādhyâbhâvasya ghaṭatvâder [2]viśeṣaṇatā-viśeṣa-sambandhenâ[2] dhikaraṇasyâprasiddhy-[3]âvyāptir iti cen na[3], [4]atyantâbhāvânyonyâbhāvayor atyantâbhāvasya saptama-padārtha--svarūpatvāt [4].

VARIANTS: (1) BI., jāty-atyantâbhāva-tadvad-anyonyâbhāvayor atyantâ-bhāvo na pratiyogi-pratiyogitâvacchedaka-svarūpaḥ kintv atiriktaḥ. Tena; (2) BI. places this between ādau and sādhyâ; (3) BI., nâvyāptiḥ; (4) BI. omits.

TRANSLATION: [Objection continued.] And you cannot say that what is meant is that the locus of absence of *s* must stand in a relation of absential particular qualification, for in that case the definition would be so narrow as not to apply where [there is a valid inference] such as '[It] possess(es) constant absence of pot-ness because it (is) a cloth', or '[It] possess(es) mutual absence of pot because it (is) a cloth'. Here there can be no locus by absential particular qualification relation of the –*s*, pot-ness etc., [since pot-ness is not negative].

[Answer.] Wrong, because a constant absence of constant or mutual absence [does not have the same nature as the presence, but] has the nature of the seventh category.

NOTES: *Insertion 5*. The relation between –*s* and *l* – *s* must be $\overline{\text{P}}$. This removes the difficulties raised in Objection 5. (This insertion is only suggested. It is later pased by in favor of Insertion 6.)

Objection 6. When *s* is negative, –*s* will be positive and therefore cannot enter into a negative relation as demanded by Insertion 5.

Example. Inference: '[It] possess(es) constant absence of pot-ness because it (is) a cloth'.

Here –*s* ≐ constant absence of constant absence of pot-ness ≐ pot-ness (according to the objector).

Rebuttal. – –pot-ness is not essentially identical with pot-ness. Cf. II, § 40. The conservative logicians disagreed with the view expressed in the rebuttal. Mathura therefore passes by Insertion 5 in favor of one which will render the definition acceptable to the majority.

TEXT 41.4–7 (BI.31.7–32.1): Atyantâbhāv-[1]ânyonyâbhāvayor[1] atyantâ-bhāvasya pratiyogy-ādi-svarūpatva-naye tu sādhyatâvacchedaka-sambandhâ-vacchinna[2]-pratiyogitāka-sādhyâbhāva-vṛtti-sādhya-sāmānyīya-pratiyogitâva-

cchedaka-sambandhena sādhyâbhāvâdhikaraṇatvaṃ vaktavyam. Vṛtty-antam pratiyogitā-viśeṣaṇam.

VARIANTS: (1) BI., -âder; (2) K. inserts here '-sādhyatâvacchedakâ-vacchinna-', but this is unnecessary; cf. end of note below and K., 46.2 where the phrase is omitted.

TRANSLATION: If one accepts the opinion that constant absence of constant or mutual absence is essentially identical with the counterpositive, etc. [of the first absence], then the locus_1 to absence of s may be said to be limited by that relation which limits the counterpositive_1 described by the whole of s and resident in $-s$. $-s$ must describe a counterpositive_1 limited by the limiting relation of s_1. [In the long compound] the portion ending with '*vṛtti*' modifies '*pratiyogitā*'.

NOTES: *Insertion 6*. The errors pointed out in Objection 5 arose from the fact that the relation between $-s$ and $l-s$ had not been regulated. Insertion 6 regulates this relation in such a way that it may be either positive or negative, depending on the nature of s. There are three points involved in the insertion.

(1) The easiest way of explaining the first point is by the use of the word 'contradictory', although no such word is actually used here. — s must be related to $l-s$ by that relation only in which it subsists as the contradictory of s. In Objection 5, example (a), 'inherent quality_1, is not contradicted by '— inherent quality_1 subsisting by content relation', for the contradiction is vitiated by the extra words 'by content relation'.

Now, instead of saying that $-s$ must be the contradictory of s, Mathura says that in $-s$ there must reside a counterpositive_1 described by [$--s$ and therefore, since we are now accepting the opinion that $--s=s$, by] s. To take example (a) of Objection 5, the counterpositive_1 to — —inherent quality_1, and therefore to inherent quality_1, can have as its limiting relation only $\overline{P}$. Otherwise $--s$ would not be essentially identical with s. As Siv. Miśra points out (41.19), "it is only of — fire as limited by $\overline{P}$ that the absence is essentially identical with fire (*vahny-abhāvasya svarūpena yo 'bhāvas tasyâiva vahni-svarūpatvāt*)". [We shall see later (42.1–5) that $-s$ can also have T as its limitor if one allows partial contradictions.] Mathura proceeds to state that the limiting relation of the counterpositive_1 in $-s$ will always be $\overline{P}$ (or T if partial contradictories are allowed) when s is positive. When s is negative this relation will be the same as the relation limiting the counterpositive_1 to this negate. Insertion 6 requires that the locus_1 to $-s$ be limited by this variable relation. Since locus_1 is limited by the limiting relation of its corresponding adjunct_1 (II, § 23, end), this means that $-s$ must occur in $l-s$ by this relation.

(2) The counterpositive_1 resident in $-s$ must be described by the whole of s. This is to insure that $-s$ be a true rather than a partial contradictory of s. Mathura discusses this point in detail later (42.1–5).

(3) So far in this note, we have discussed the counterpositive$_1$ resident in $-s$ and described by $- -s$ ($\doteq s$). There is also a counterpositive$_1$ resident in s and described by $-s$. This counterpositive$_1$ is restricted exactly as it was in Insertion 3, viz., it must be limited by Rs_1. The restriction of Insertion 4, viz., that this counterpositive$_1$ be limited by gs_1, is added here in the K Text, but is really unnecessary, since this requirement is covered by Insertion 6, point 2.

TEXT 41.7–9 (BI.32.1–3): Tādṛśa-sambandhaś ca vahnimān dhūmād ity-ādi--bhāva-sādhyaka-sthale viśeṣaṇatā-viśeṣa eva, ghaṭatv-[1]âtyant[1]-âbhavavān paṭa-tvād ity-ādy-abhāva-sādhyaka-sthale tu samavāyâdir eva.

VARIANT: (1) BI. omits.

TRANSLATION: Such a relation can only be [absential] particular qualification when s is positive, as in '[It] possess(es) fire because [it possess(es)] smoke'. On the other hand, it can only be [a positive relation] such as inherence etc. when s is negative, as in '[It] possess(es) constant absence of pot-ness because it (is) a cloth'.

TEXT 42.1–5 (BI.32.3–8): Samavāya-viṣayitvâdi-sambandhena prameyâdi--sādhyake jñānatvâdi-hetau sādhyatâvacchedaka-samavāyâdi-sambandhâvacchi-nna-prameyâdy-abhāvasya kālikâdi-sambandhena yo 'bhāvaḥ so 'pi prameyatayā sādhyântargatas tadīya-pratiyogitâvacchedaka-kālikâdi-sambandhena sādhy-âbhāvâdhikaraṇe[1] jñāne[1] jñānatvâder vṛtter avyāpti-vāraṇāya sāmānya-padôpā-dānam.

VARIANT: (1) BI. omits.

TRANSLATION: [Suppose an inference] where 'object of knowledge' etc. is s by inherence, content-relation, etc., and knowledge-ness etc. is h; of an absence [$-s$] by temporal relation etc. of object of knowledge etc. [s], which absence is [the describer of a counterpositive$_1$] limited by inherence, which is the limiting relation of the *sādhya*-ness, the [further] absence [viz., $- -s$] will be included in s inasmuch as it [$- -s$] too is an object of knowledge; yet, by temporal relation etc., which is the limiting relation of the specified counterpositive$_1$ [c_1 resident in $-s$], knowledge is a locus of absence of s, and knowledge$_1$ etc. occurs in knowledge. It is because the definition would not otherwise apply in such cases that the word 'whole of' is added.

NOTES: It was explained above that $-s$ must be the contradictory of s, but this is not enough. It must contradict the whole of s. Objection 7 shows what happens if a partial contradiction is allowed, i.e., if Insertion 6, point 2 is not admitted.

Objection 7. A true inference would appear false.

Example. Inference: '[It] possess(es) an object of knowledge etc. inhering in it or forming its content, because it (is) knowledge'.

To explain: The object of knowledge that inheres in knowledge is the generic

character knowledge$_1$. The object of knowledge related by content-relation to knowledge are all the things we know about.

s:	object of knowledge (by H or content-relation)	$-s$:	– object of knowledge	*h*:	knowledge$_1$
ls:	knowledge			*lh*:	knowledge

If $-s$ may subsist by T, then knowledge is a locus of $-s$, for both knowledge and this absence may exist within the same division of time. The question is, may $-s$ subsist by T? Only noneternal entities subsist by T (cf. II, § 53, para. 3). If $-s$ subsists by T, it can contain only noneternal objects. The further negation of this $-s$ then, since it includes only what is excluded by $-s$, will include only eternal objects. Now, these eternal objects are objects of knowledge. Therefore this $- -s$ refers to some of the same objects referred to by *s*. $- -s$ is included in *s*, and the 'absence by T of *s*' that is involved is a partial contradiction. Unless expressly provided against, this partial contradiction will be permissible, for Insertion 6, point 1 merely requires the counterpositive$_1$ in $-s$ to be described by *s* without saying how much of *s* is meant.

Śiv. Miśra and Ṭippaṇī, 1 to BI. 32 suggest that this difficulty could be remedied where s_1 is limited by H by requiring the c_1 in $-s$ to be described by something which actually occurs. Eternal entities, the only ones included in our $- -s$, do not occur by H (cf. II, § 49). However, this remedy will not suffice where s_1 is limited by content relation, for eternal objects can form the content of knowledges.

The difficulty is wholly remedied by the requirement of Insertion 6, point 2, viz., that the c_1 in $-s$ must be described by the whole of *s*. This is as much as to say that $- -s$ must contain as much as *s*, or that $-s$ must be a true rather than a partial contradictory of *s*. Under this requirement, when *s* is positive, $-s$ can only subsist by $\overline{\text{P}}$.

TEXT 42.6–7 (BI.32.8–9): Sādhya-sāmānyīyatvaṃ ca yāvat-sādhya-nirūpitatvaṃ svânirūpaka-sādhyaka-bhinnatvam iti yāvat.

TRANSLATION: Being described by the whole of *s* means that it is described by that which is of as great extent as *s*. This means that it is different from [a counterpositive$_1$] to a *sādhya* which does not describe it [the counterpositive$_1$].

NOTES: The meaning of the first gloss is obvious. The second gloss is added since Mathura feels that when *s* is a single individual it may possess no whole (or literally, class character; cf. II, § 16). An example is '*Etad-rūpavān etad-rasāt*' — '[It] possess(es) this appearance because [it possess(es)] this taste [i.e., It looks like this because it tastes like this]'. If one uses the second gloss, the definition holds good, for the *s*, 'this appearance', contains nothing which does not describe the counterpositive$_1$ resident in 'absence of this appearance'.

TEXT 42.7–10 (BI.32.9–33.3): Asyâikôkti[1]-mātra-paratayā[1] gauravasyâdoṣa-tvāt, [2]anumiti[2]-kāraṇatâvacchedake ca bhāva-sādhyaka-sthale abhāvīya-viśeṣa-ṇatā-viśeṣena sādhyâbhāvâdhikaraṇatvam, abhāva-sādhyaka-sthale ca yathā--yatham samavāyâdi-sambandhena sādhyâbhāvâdhikaraṇatvam upādeyam, sādhya[3]-bhedena kārya-kāraṇa-bhāva-bhedāt.

VARIANTS: (1) BI., mātratayā; (2) BI. omits; (3) K. inserts 'sādhana' in parentheses.

TRANSLATION: Since it [the variable relation limiting locus$_1$ to $-s$] is covered by one word only, there is no fault of 'heaviness'. Accordingly, in a pervasion it is permissible to take locus$_1$ to $-s$ to be limited by absential particular qualification relation when s is positve, and to take locus$_1$ to $-s$ to be limited by whatever [positive relation], inherence etc., is appropriate when s is negative, for the process of cause and effect will differ as the s differs.

NOTES: For the fault of 'heaviness,' cf. II, § 21. Insertion 6 allows various relations for $l - s$ whereas Insertion 5 allowed it only one. Hence Insertion 6 would suffer from heaviness in comparison with Insertion 5 if it were not that the variable relation is expressed by a single word.

'In a pervasion it is permissible . . .': literally, 'in the limitor of the cause$_1$ to inference it is permissible . . .' Every inference is caused by a pervasion (II, § 4), hence pervasion may be called the limitor of the cause$_1$ to inference (cf. II, § 22, examples 4 and 8).

TEXT 43.1–44.1 (BI.33.3–6): Na ca tathâpi ghaṭânyonyâbhāvavān paṭatvād ity atrânyonyâbhāva-sādhyaka-sthale ghaṭatvâdi-[1]rūpa[1]-sādhyâbhāve na sādhya--pratiyogitvam na vā samavāyâdi-sambandhas tad-avacchedakas tādātmyasyâiva tad-avacchedakatvād ity avyāptis tad-avasthêti vācyam.

VARIANT: (1) BI., -rūpe-.

TRANSLATION: The following [objection] should not be made: The definition still will be so narrow as not to apply where [there is the valid inference]: '[It] possess(es) mutual absence of pot because it (is) a cloth', for where s is a mutual absence, $-s$, since it will be essentially identical with pot-ness etc., cannot be a counterpositive to s, nor can inherence etc. be its limiting relation, for only essential identity can be its limiting relation.

NOTE: *Objection 8*. According to the theory that $- \dot{-}$pot $\doteq$ pot-ness (cf. II, § 42, example 1), Insertion 6 would require one to throw out a valid inference.

Example. Inference: '[It] possess(es) mutual absence of pot because it (is) a cloth'.

s: $\dot{-}$pot	$-s$: $- \dot{-}$pot ($\doteq$pot$_1$)	h: cloth-ness
ls: cloth		lh: cloth

The c of $\dot{-}$pot is pot, not pot-ness. Accordingly, there appears to be no c_1 in $-s$ (pot-ness) to s, but only a c_1 to $- -s$ ($- - \dot{-}$pot). Furthermore, since s is a mutual absence, the c_1 it describes must be limited by a relation of essential identity only (cf. II, § 27, and § 39, end). Even if $- \dot{-}$pot were the c of $\dot{-}$pot it could not subsist by inherence as required by Mathura's interpretation (41.7–9) of Insertion 6.

Insertion 6 employs the term 'counterpositive$_1$, resident in $-s$, to the whole of s'. Mathura later (47.1–6) shows that the specification 'resident in $-s$' cannot be omitted. Accordingly, in every example of inference we must be able to find a counterpositive$_1$ resident in $-s$ to the whole of s, or our definition as interpreted by Insertion 6 will suffer from the fault of unexampled term (II, § 56). Now the theory that $- \dot{-}$pot $\doteq$ pot-ness gives rise to two types of case where we seem to have this fault; first, the type where $-s$ is in the form of $- \dot{-}x$; second, the type where $-s$ is in the form of $\dot{-}x$. Objection 8 is concerned with the first type.

A word about Mathura's method of solving the Type 1 difficulty may facilitate the reader's understanding of the involved argument that follows. Mathura does not deny that $- \dot{-}$pot is essentially identical with pot-ness. He does not here tell us in what form he himself conceives it to be; he does this later when dealing with the Type 2 difficulty. Here he simply shows that no matter what form $- \dot{-}x$ may have, it must be the c of $\dot{-}x$. This is all that is necessary to remove the stigma of 'faulty from unexampled term' from his definition.

TEXT 44.1–3 (BI.33.7–10): Atyantâbhāvâbhāvasya pratiyogi-rūpatveṇa ghaṭa-bhedasya ghaṭa-bhedâtyantâbhāvatvâvacchinna-[1]pratiyogitāk[1]-âbhāva--rūpatayā ghaṭa-bhedâtyantâbhāva-rūpasya ghaṭa-bheda-pratiyogitâvacchedakī-bhūta-ghaṭatvasyâpi samavāya-sambandhena ghaṭa-bheda-pratiyogitvāt.

VARIANT: (1) BI. omits.

TRANSLATION: [The above objection should not be made,] for this reason: Absence of a constant absence is essentially identical with the counterpositive [of the constant absence]. Therefore, difference from pot is essentially identical with an absence the counterpositive$_1$ to which is limited by constant absence$_1$ of difference from pot. Therefore, even pot-ness, although it is the limitor of counterpositive$_1$ to difference from pot, in so far as it is essentially identical with constant absence of difference from pot, is still the counterpositive itself of difference from pot and subsists by inherence.

NOTESS *Rebuttal.* Cf. II, § 42, para. 3. We agreed to give up Insertion 5 and to admit that $x \doteq - -x$.

It follows that $\dot{-}x \doteq - - \dot{-}x$.

Now, $- \dot{-}x$ is surely the c of $- - \dot{-}x$.

Therefore, $- \dot{-}x$ is the c of $\dot{-}x$. From this it follows further that the relation in which $- \dot{-}x$ stands must be the same as the relation in which x stands (cf.

Trans., 41.7–9). In 44.1–3 the word 'inherence' is to be taken to represent any positive relation.

The above argument shows that even where s is a mutual absence, there will be a c_1 to s resident in $-s$, and this c_1 can be limited by relations other than essential identity as demanded by Insertion 6.

TEXT 44.4–6 (BI.33.10–13): Na cânyatrâtyantâbhāvâbhāvasya pratiyogitve 'pi ghaṭâdi[1]-bhedâtyant-[2]âbhāvatvâvacchinnâbhāvo[2] na ghaṭâdi-bheda-svarūpaḥ kintu tat-pratiyogitâvacchedakībhūta-ghaṭatvâtyantâbhāva-svarūpa evêti siddhānta iti vācyam.

VARIANTS: (1) K. omits âdi; (2) BI., âbhāvâbhāvo.

TRANSLATION: The following theory should not be held: Although in other cases absence of constant absence is essentially identical with the counterpositive [to the constant absence], still an absence limited by constant absence$_1$ of difference from pot etc. is not essentially identical with difference from pot etc., but is only essentially identical with constant absence of pot-ness, the limitor of its counterpositive$_1$.

NOTES: *Objection 9.* In most cases

$$- -x \doteq x,$$

but it is not true that

$$- - \dot{-}\text{pot} \doteq \dot{-}\text{pot}.$$

We can only say that

$$- - \dot{-}\text{pot} \doteq -\text{pot-ness}.$$

To explain 'limited by constant absence$_1$ (*atyantâbhāvatva*) of': Just as the absence of pot is limited by the limitors of its c_1, i.e., by pot-ness etc. (II, §§ 30, 31), so is absence of constant absence of pot limited by the limitors of *its* c_1. Now, its c is constant absence of pot, and the c_1 resident in this has two sets of limitors (II, § 30), one of which includes constant absence$_1$ (*atyantâbhāvatva*).

TEXT 44.6–10 (BI. 33.13–17): Yathā hi ghaṭatvâvacchinna-ghaṭavattā-grahe ghaṭâtyantâbhāvasyâgrahād ghaṭâtyantâbhāvâbhāva-vyavahārāc ca ghaṭâtyantâbhāvâbhāvo ghaṭa-svarūpas, tathā ghaṭa-bhedavattā-grahe ghaṭa-bhedâtyantâbhāvâgrahād ghaṭa-bhedâtyantâbhāvâbhāva-vyavahārāc ca ghaṭa-bheda eva tad-atyantâbhāvatvâvacchinna-pratiyogitākâbhāva iti tat-siddhānto na yuktisahaḥ.[1]

VARIANT: (1) K. adds 'iti'.

TRANSLATION: Such a theory cannot be upheld, for wherever one perceives a pot, there one does not perceive constant absence of a pot, and there one may say there is absence of constant absence of a pot. Accordingly, absence of constant absence of pot is essentially identical with pot. In just the same way, wherever one perceives difference from pot, there one does not perceive constant absence of difference from pot, and there one may say there is absence of constant absence of difference from pot. Accordingly, an absence the counterpositive$_1$ to

which is limited by constant absence$_1$ of difference from pot is simply difference from pot.

NOTES: *Rebuttal.* The only reason for claiming that $- -\text{pot} \doteq \text{pot}$ is that wherever one occurs the other occurs and vice versa (cf. II, § 40). But this is just as true of the pair $- - \dot{-}\text{pot}$ and $\dot{-}\text{pot}$.

To explain 'wherever one perceives a pot': Literally, this is 'where one perceives the property possessor$_1$ (i.e., locus$_1$) to pot, this possessor$_1$ being limited by potness'. Such possessor$_1$ resides in all entities on which a pot occurs.

TEXT 44.11–12 (BI.33.17–19): Vinigamakâbhāve[1] 'pi[1] ghaṭatvatvâvacchinna-pratiyogitāk[2]-âbhāvavad ghaṭa-bhedasyâpi ghaṭa-bhedâtyantâbhāvâbhāvatva-siddher apratyūhatvāc ca.

VARIANTS: (1) BI., -nâpi; (2) BI. inserts 'atyanta'.

TRANSLATION: There can be no objection to our theory, since, in the absence of a criterion favoring one alternative, we can prove that absence of constant absence of difference from pot is difference from pot as well as an absence the counterpositive$_1$ to which is limited by pot-ness-ness.

NOTES: We can show that

$$- - \dot{-}x \doteq \dot{-}x \text{ and } - - \dot{-}x \doteq -x_1.$$

TEXT 44.12–45.4 (BI.33.19–34.4): Ata eva tādṛśa-siddhānto nôpādhyāya-sammataḥ. Ata eva ca abhāva-virahâtmatvaṃ vastunaḥ pratiyogitā ity ācāryāḥ. Anyathā ghaṭa-bhedâtyantâbhāva-pratiyogini ghaṭa-bhede tal-[1]lakṣaṇâvyāpteḥ[1], anyonyâbhāva-pratiyogitâvacchedaka-ghaṭatvâtyantâbhāve tal-lakṣaṇasyâtivyāpty-āpatteś ca.

VARIANT: (1) BI., lakṣaṇâvyāpty-āpatteḥ.

TRANSLATION: That is why the objector's theory is in disagreement with that of the Teachers. That is why Udayana has defined *a counterpositive [of the absence of a thing] as the absence of the absence of that thing*. Otherwise [viz., if one insists on the theory that $- - \dot{-}x \doteq -x_1$ only] one is forced into a definition of it [viz., counterpositive$_1$] which will fail to cover the valid statement "the counterpositive of constant absence of difference from pot is difference from pot," and which will cover the false statement "[the counterpositive of constant absence of difference from pot is] a constant absence of pot-ness which is the limitor of the counterpositive$_1$ to a mutual absence."

NOTES: The quotation from Udayana is from *Kusumâñjali*, III, 2 (as noted by Sen). In Navya-nyāya, Udayana is regularly referred to as '*The* Teacher' (*ācāryāḥ*).

If one insists that $- - \dot{-}x \doteq -x_1$ alone, then
 the c of $- \dot{-}x$ will be $-x_1$,
 the c of $- \dot{-}x$ cannot be $\dot{-}x$.

TEXT 45.4–8 (BI.34.4–9): Na câivaṃ ghaṭatvatvâvacchinna-pratiyogitāka-ghaṭatvâtyantâbhāvasyâpi ghaṭa-bheda-svarūpatvâpattir iti vācyam. Tad-atya-

ntâbhāvatvâvacchinna-pratiyogitākâbhāvasyâiva tat-svarūpatvâbhyupagamāt tadvattā-grahe tādṛśa-tad-atyantâbhāvâbhāvasyâiva vyavahārāt, upādhyāyair ghaṭatvatvâvacchinna-pratiyogitāka-ghaṭatvâtyantâbhāvasyâpi ghaṭa-bheda-svarūpatvâbhyupagamāc ca.

TRANSLATION: [Objection.] Then you must admit that 'absence of pot-ness the counterpositive$_1$ to which absence is limited by pot-ness-ness' also is essentially identical with 'difference from pot'.

[Answer.] Such an objection should not be made, for what we accepted was only that 'an absence [viz., $- - \dot{-}x$] the counterpositive$_1$ to which is limited by constant absence$_1$ of it [viz., $\dot{-}x$]' is identical with it [$\dot{-}x$], and we did this on the principle that wherever one perceives a thing one may speak of the absence of constant absence of that thing. Furthermore, [there is no fault in admitting the point you suggest since] the Teachers admit that 'absence of pot-ness the counterpositive$_1$ to which absence is limited by pot-ness-ness' also is identical with 'difference from pot'.

NOTES: 'Also (*api*): i.e., as well as $- - \dot{-}$pot.

Objection 10. If you admit that

$$- - \dot{-}x \doteq \dot{-}x \text{ and } - - \dot{-}x \doteq -x_1,$$

you must admit that

$$\dot{-}x \doteq -x_1,$$

yet the c_1 to $-x_1$ is limited by x_2, [while by your own admission the c_1 to $\dot{-}x$ is limited by x_1].

Answer. We have not actually said that $\dot{-}x \doteq -x_1$. The only thing we said was identical with $\dot{-}x$ was $- - \dot{-}x$.

[A distinction is here made between $\dot{-}x$ and $- - \dot{-}x$. $\dot{-}x$ is an absence the c_1 to which is limited by x_2, whereas $- - \dot{-}x$ is an absence the c_1 to which, although limited by x_2 (since $- \dot{-}x \doteq x_1$), is also limited by constant absence$_1$.]

However, there is no harm in admitting that $\dot{-}x \doteq -x_1$, since tradition warrants it.

TEXT 46.1–47.1 (BI.34.9–12): Na câivaṃ sādhya-sāmānyīya-pratiyogitâvacchedaka-sambandhenâiva sādhyâbhāvâdhikaraṇatvaṃ vivakṣyatām, kiṃ sādhyatâvacchedaka-sambandhâvacchinna-[1]pratiyogitāka[1]-sādhyâbhāva-vṛttitvasya pratiyogitā-viśeṣaṇatvêti vācyam.

VARIANT: (1) BI. omits.

TRANSLATION: [Objection.] Let the meaning of the definition be simply that the locus of absence of s subsists by the relation which limits that counterpositive$_1$ which is described by the whole of s. What is the use of qualifying this counterpositive$_1$ by 'residing in the absence of s, an absence to which the counterpositive$_1$ is limited by the limiting relation of s_1'?

NOTES: *Objection 11.* In Insertion 6, what is the point of repeating Insertion 3? Why not say simply that $l - s$ must subsist by Rc_1 ⌞whole of s⌟?

TEXT 47.1–6 (BI.34.12–35.5): Kālika-sambandhâvacchinna-[1]pratiyogitā-k[1]âtmatva-prakāraka-pramā-viśeṣyatvâbhāvasya viśeṣaṇatā-viśeṣena sādhyatva ātmatvâdi-hetāv avyāpty-āpatteḥ, kālika-sambandhâvacchinna-sādhyâbhāvasya viśeṣaṇatā-viśeṣeṇa[2]yo 'bhāvas tasyâpi sādhya-rūpatayā kālika-sambandhavad viśeṣaṇtā-viśeṣo 'pi sādhyīya-pratiyogitâvacchedaka-sambandhas tena sambandhenâtmatva-prakāraka-pramā-viśeṣyatva-rūpa-sādhyâbhavavaty ātmani hetor ātmatvasya vṛtteḥ.

VARIANTS: (1) BI. omits; (2) BI. adds sambandhena.

TRANSLATION: [Answer.] Such a simplification should not be made, because in that case the definition would fail to apply [in a valid inference] where *s* is 'absence of qualificand$_1$ in a valid knowledge in which the chief qualifier is soul-ness, the counterpositive$_1$ to this absence being limited by [indirect] temporal relation and the absence itself subsisting by particular qualification relation', and where the *h* is soul-ness etc. The fault would arise as follows: Of an absence of *s* [the counterpositive$_1$ to which could be] limited by temporal relation while the absence itself subsisted by particular qualification relation, the further absence would be in the form of *s*. Hence [there would reside in $-s$ a counterpositive$_1$ not only to $- -s$ but to *s*, and] the relation limiting the counterpositive$_1$ to *s* could be particular qualification just as well as temporal. Now, by this relation [viz., particular qualification], soul is a locus of $-s$, since $-s$ is in the form of 'qualificand$_1$ in a valid knowledge of which the chief qualifier is soul-ness', and the *h*, soul-ness, occurs in soul.

NOTES: *Answer*. Such a simplification would leave the relation between *s* and *ls* unspecified in the process of determining the relation of $l - s$. This would lead to a fault, for a true inference would appear false.

Example. Inference: '[It (viz., a soul)] possess(es) absence of qualificand$_1$ in a valid knowledge in which soul-ness is the chief qualifier, the counterpositive$_1$ to this absence being limited by T and the absence itself subsisting by P, because [it possess(es)] soul-ness [i.e., because it (is) a soul]'.

The *s* here is complicated by the necessity of splitting the self-contradictory term 'soul limited by indirect temporal relation'. For explanation, see II, § 57.

In this inference:

s = Absence of qualificand$_1$ etc. etc.,

Rs_1 = P (note the ambiguity of this; what is meant is $\overline{P}$; cf. II, § 29),

c of s = qualificand$_1$ in a valid knowledge in which the chief qualifier is soul-ness,

$Rc_1 \llcorner s \lrcorner$ = T,

h = soul-ness,

lh = soul.

If we take into consideration all the relations given in the data of our example, no fault will occur:

c of s	s	$-s$
T	$\overline{\text{P}}$	T

$-s$ must subsist by T in order to be the same as c of s. By T, qualificand$_1$ of the specified sort is not related to lh (soul).

However, if we simplify Insertion 6 by leaving out the portion '[c_1] resident in $-s$ which ($-s$) must be an absence the c_1 to which is limited by Rs_1', then no account need be taken of the relation limiting s_1, and we need not consider that part of the data of our example. We can assign to s any relation we choose.

Suppose we assign to s the relation T, and suppose we construct $- -s$ so that there may be resident in $-s$ a $c_1 \llcorner - -s \lrcorner$ (and therefore a $c_1 \llcorner s \lrcorner$). Since $-s$ must be the true contradictory of s (cf. last paragraph of notes to 42.1–5), the relation by which $-s$ subsists must now be P. Note again the ambiguity of 'P'. It can mean either P or $\overline{\text{P}}$.

If we simplify Insertion 6 as suggested, we may therefore have the following series of relations:

s	$-s$	$- -s$
T	P	T

Now, by P (*positive* particular qualification), $-s$ (qualificand$_1$ in a valid knowledge of which the chief qualifier is soul-ness) resides in soul. Thus, $-s$ occurs in lh, or in other words, h occurs in $l - s$, and the valid inference appears false.

It is obvious that this fault cannot arise if we retain the full form of Insertion 6, for in that case we are forced to take account of Rs_1 which is given as P, and $-s$ must then be related by R$c_1 \llcorner s \lrcorner$ which is T.

TEXT 50.1–51.1 (BI.35.5–36.1): Pratiyogitâvacchedakavat pratiyogy apy anyonyâbhāvâbhāvaḥ, tena[1] tādātmyena[1] sādhyatāyāṃ [2] sādhyâbhāva-vṛtti--sādhya-sāmānyīya-pratiyogitvasya nâprasiddhiḥ.

VARIANTS: (1) BI., tādātma-sambandhena; (2) BI. inserts 'sādhyatâvacchedaka-sambandhâvacchinna'.

TRANSLATION: The absence of a mutual absence is the counterpositive [itself of the mutual absence] just as it is the limitor of the counterpositive$_1$ to the mutual absence. Thus, when s_1 is limited by essential identity, there is indeed resident in absence of s counterpositive$_1$ described by the whole of s.

NOTES: Definition:

$$- \dot{-}x \doteq x_1 \text{ just as } - \dot{-}x \doteq x.$$

As pointed out in II, § 42, this must be interpreted:

$$\text{Sometimes } - \dot{-}x \doteq x_1 \text{ and sometimes } - \dot{-}x \doteq x.$$

Type 1 difficulty (cases where $-s$ is in the form of $- \dot{-}x$; cf. notes on 43.1–44.1) was overcome by showing that $- \dot{-}x$ must be the c of $\dot{-}x$ no matter what its form may be. One cannot overcome Type 2 difficulty (cases where absence of s is in the form of $\dot{-}x$) so easily.

Example. Inference: '[It] (is) essentially identical with pot because [it possess(es)] pot-ness'.

s:	pot	$-s$:	$\dot{-}$pot	h:	pot_1
ls:	pot			lh:	pot

Rs_1 = essential identity.

Therefore, absence of s must be a mutual absence.

Absence of s is c of $-$absence of s ($- \dot{-}$pot).

If $- \dot{-}$pot is in the form of pot-ness only and not pot, then there is no c_1 in absence of s to s (pot), and the definition suffers from the fault of unexampled term.

Mathura overcomes the fault by allowing $- \dot{-}x$ to be essentially identical with x as well as with x_1. Hereby, in the example above there is in absence of s ($\dot{-}$pot) a c_1 to pot (s). As remarked in II, § 42, the solution is not a happy one and there were Naiyāyikas who objected to it.

TEXT 51.2–4 (BI.36.1–5): Itthaṃ câtyantâbhāvatva-nirūpitatvenâpi sādhya-sāmānyīya-pratiyogitā viśeṣaṇīyā, anyathā ghaṭânyonyâbhāvavān ghaṭatvatvād ity-ādāv [1]avyāpteḥ[1], tādātmya-sambandhasyâpi sādhyâbhāva-vṛtti-sādhyīya-pratiyogitâvacchedakatvāt.

VARIANT: (1) BI., avyāpty-āpatteḥ.

TRANSLATION: Even so, one must qualify '$counterpositive_1$ to the whole of s', as '$counterpositive_1$ described by constant $absence_1$'. Otherwise the definition would fail to apply where [there is a valid inference] such as '[It] (is) different from pot because it (is) potness', for a relation of essential identity could equally well be the relation limiting the $counterpositive_1$ resident in $-s$ and described by s.

NOTES: 'Different from pot': lit. 'possessing mutual absence of pot'; cf. II, § 27. For the meaning of '$counterpositive_1$ described by constant absence-ness', cf. II, § 28.

Insertion 7. Where Insertion 6 speaks of a c_1 resident in $-s$ and described by the whole of s, one must require further that this c_1 be described by a constant rather than by a mutual absence. Otherwise a true inference would appear false.

Example. Inference: (literally) '[It] possess(es) mutual absence of pot because [it possess(es)] pot-ness-ness'.

c_1' ↓ pot	s:	$\dot{-}$pot	c_1'' ↓ $-s$:	$-\dot{-}$pot ($\doteq$ pot as well as pot_1)	$--s$:	$--\dot{-}$pot	h:	pot_2
	ls:	all things other than pots					lh:	pot_1

One may here conceive of two counterpositivenesses, a c_1' resident in the c of $\dot{-}$pot (s), and a c_1'' resident in the c of $--\dot{-}$pot ($--s$).

Since c_1' is limited by essential identity, one might take c_1'' to be limited by essential identity. Then, since $-s$ is pot-ness as well as pot, a locus of $-s$ would be pot-ness. Thus, h would occur in $l-s$.

But if one requires c_1'' to be described by a constant absence, then c_1'' cannot be limited by essential identity (if it were, the absence by which it is described would be mutual), but will be limited by inherence etc. By inherence, pot-ness is related to pots. Thus h will not occur in $l-s$.

TEXT 51.5–53.3 (BI.36.5–10): Yad vā sādhyatâvacchedaka-sambandhâvacchinna-sādhyâbhāva-vṛtti-sādhya-sāmānyīya-[1]nirukta[1]-pratiyogitva-tad-avacchedakatvânyatarâvacchedaka-sambandhenâiva sādhyâbhāvâdhikaraṇatvam vivakṣaṇīyam. Vṛtty-antam anyatara-viśeṣaṇam. Evaṃ ca ghaṭânyonyâbhāvavān paṭatvād ity-ādau sādhyâbhāvasya ghaṭatvâdeḥ [2]sādhyīya[2]-pratiyogitva-virahe 'pi na kṣatiḥ, tādṛśânyatarasya [3]sādhyīya[3]-pratiyogitâvacchedakatvasyâiva tatra sattvāt.

VARIANTS: (1) BI. omits; (2) BI., sādhya-; (3) BI. omits.

TRANSLATION: Or the intention [of Gaṅgeśa' definition] may be said to be that the $locus_1$ to absence of s is limited by the limiting relation of either (1) the aforementioned $counterpositive_1$ described by the whole of s or (2) the $limitor_1$ to 1. Whichever property one chooses must be resident in $-s$, $-s$ being an absence [whose $counterpositive_1$ is] limited by the limiting relation of s_1. [In the long compound] the portion ending with '*vṛtti*' modifies '*anyatara*'. If [one interprets the definition] thus, there will be no fault in such cases [of valid inference] as '[It] possess(es) mutual absence of pot because it (is) a cloth', even though there is no $counterpositive_1$ to s resident in the absence of s, pot-ness etc., for there *is* resident in $-s$ a $limitor_1$ to the $counterpositive_1$ to s, which is one of the alternatives.

NOTES: To explain '$limitor_1$ to the $counterpositive_1$': The c of $-$pot is pot. c_1 to (i.e., described by) $-$pot is a property residing by P in pot. The limitor of the c_1 in pot is pot-ness. $Limitor_1$ to the c_1 to $-$pot is a property residing in pot-ness.

Insertion 8. (I simplify 'whole of s' by 's'):
$-s$ subsists either by the limiting relation of

$$c_1 \llcorner s \lrcorner \, P - s$$

or by the limiting relation of

$$\text{limitor}_1 \llcorner c_1 \llcorner s \lrcorner \, P - s \lrcorner.$$

This is an alternative insertion to No. 6 for establishing the relation of $l - s$. It suffers from 'heaviness' in comparison with Insertion 6, but Mathura shows that if one accepts it, Objection 8 (cf. notes to 43.1–44.1) cannot arise.

Example. Inference: '[It] possess(es) mutual absence of pot because it (is) a cloth'.

c_1		limitor$_1$		
↓		↓		
pot	s: $\dot{-}$pot	$-s$:	$-\dot{-}$pot ($\doteq$ pot$_1$)	h: cloth$_1$
			$l - s$: pot	lh: cloth

Here, even if there resides in $-s$ no $c_1 \llcorner s \lrcorner$, there does reside in $-s$ the limitor$_1$ to $c_1 \llcorner s \lrcorner$, for the limitor of $c_1 \llcorner s \lrcorner$ is pot-ness, and in any limitor there resides a limitor$_1$ to (described by) that which is limited. This limitor$_1$ will in turn be limited by the relation in which its locus (here the limitor, pot-ness) stands; cf. II, § 24. Pot-ness as a limitor of pots subsists by inherence. The $l - s$ by inherence is pots, and thus h (cloth-ness) does not occur in $l - s$ (pots).

TEXT 59.1–3 (BI. 36.10–13): Na ca tathâpi kapi-saṃyogy etad-vṛkṣatvād ity-ādy-avyāpya-vṛtti-sādhyaka-sad-dhetāv avyāptir iti vācyaṃ, nirukta-sādhyâbhāvatva-viśiṣṭa-nirūpitā yā nirukta[1]-saṃsargaka-niravacchinnâdhikaraṇatā tad--āśrayâvṛttitvasya vivakṣitatvāt.

VARIANT: (1) BI. inserts -sambandha-.

TRANSLATION: One cannot object that even so the definition will fail to apply where [the inference is valid but] s is of incomplete occurrence, such as '[It] possess(es) contact with a monkey because it (is) this tree', for what the definition means is 'absence of occurrent$_1$ [in h] to the substratum of that unlimited locus$_1$ whose [limiting] relation is the aforementioned one and which is described by [an entity] qualified by absence-ness of s, absence of s being as before mentioned'.

NOTES: Explanation follows next section of text.

TEXT 59.3–61.2 (BI.36.13–16): Guṇa-karmâṇyatva-viśiṣṭa-sattâbhāvavān guṇatvād ity-ādau sattâtmaka-sādhyâbhāvâdhikaraṇatvasya guṇâdi-vṛttitve 'pi sādhyâbhāvatva-viśiṣṭa-nirūpit-[1]âdhikaraṇatvasya guṇâdy[1]-avṛttitvān nâvyāptiḥ.

VARIANT: (1) K., -âdhikaraṇâdy-.

TRANSLATION: The definition [thus understood] will not fail to cover such valid inferences as '[It] possess(es) absence of reality qualified by the property

peculiar to that which is other than quality or action, because it (is) quality' etc., even though a $locus_1$ described by $-s$, since $-s$ is reality, occurs in quality etc., for a $locus_1$ described by an entity qualified by absenceness of s does not occur in quality etc.

NOTES: Mathura offers an insertion to remove two possible objections.

Objection 12. Where s is of incomplete occurrence a true inference will appear false. [For the problem of incomplete occurrence, cf. II, §§ 45 and 46.]

Example. Inference: '[It] possess(es) contact with a monkey because it (is) this tree'.

s:	contact with a monkey	$-s$:	$-$contact with a monkey	h:	this-$tree_1$
		$l'-s$:	this tree		
		$l''-s$:	quality etc.		

Here there are two types of $l-s$, a locus to the limited $occurrent_1$ of $-s$ and a locus to the unlimited $occurrent_1$ of $-s$. 'This tree' (l') is a locus to limited $occurrent_1$, for it is also a locus of s. Furthermore, if we use l' our definition will suffer from the fault of nonpervasion, for h will occur in $l-s$.

Contact is one of the 24 qualities. Since qualities can inhere only in substances, the locus of contact by inherence (i.e., ls) can only be a substance. Quality, or any other category except substance, is a locus of $-$contact ($l-s$) by inherence. Now this is a locus to unlimited $occurrent_1$, for it is not also a locus of s. If we are forced to use this locus no fault will occur in our definition.

Objection 13. When s is the absence of a qualified entity a true inference will appear false. [For the problem of qualified entities, cf. II, § 41.]

Example. Inference: '[It] possess(es) absence of reality qualified by (i.e., accompanied by) the property peculiar to that which is other than quality or action, because it (is) quality'.

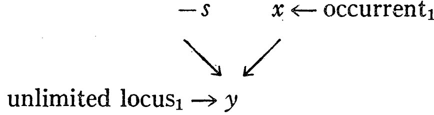
s:	$-$reality accompanied by the property peculiar to that which is other than quality or action	$-s$:	$--$reality accompanied by the property peculiar to that which is other than quality or action. This =	h:	$quality_1$

$-s\ (a)$:	reality accompanied by the property peculiar to that which is other than quality or action	$-s\ (b)$:	pure reality
$l-s\ (a)$:	substance	$l-s\ (b)$:	substance quality action

h occurs in locus (quality) of $-s$.

Insertion 9. Where Gaṅgeśa's first definition speaks of '$-$occurrent$_1$ resident in h and described by $l - s$' (i.e., says that h must not occur in $l - s$), what is meant is '$-$occurrent$_1$ described by the substratum $(l - s)$ of an unlimited locus$_1$ which is described by an entity qualified by absence-ness of $-s$'.

Insertion 9 contains two new restrictions. For the first one the following terms will suffice:



$-s$ occurs completely in y, that is, there is no part of y in which $-s$ does not occur; hence, an abstract property 'unlimited locus$_1$ described by $-s$' (cf. II, § 46) appears in y. y is the substratum (another word for locus) of this unlimited locus$_1$. If x also occurs in y, an abstract property 'occurrent$_1$ described by y' will reside in x. Insertion 9 forbids such an occurrent$_1$ to reside in h.

Objection 12 is now removed, because, in the example there offered, an unlimited locus$_1$ described by $-s$ resides only in l'' (quality etc.), and h does not occur in l''.

Before proceeding to the second new restriction, notice that two old ones have been incorporated. First, $-s$ is 'as before mentioned' (see translation), i.e., is to be given the restriction imposed by Insertion 6. Second, the unlimited locus$_1$ must be limited by the 'aforementioned' relation, that is, by the relation defined in Insertion 6 or 8. That the 'unlimited' locus$_1$ can still be 'limited' by the relation in which the superstratum ('$-s$' of diagram above) stands to the locus ('y') in which this locus$_1$ resides, is due to the different senses in which 'limited' is used, as explained in II, § 46.

The second new restriction of Insertion 9 substitutes for '$-s$' of the diagram above, 'an entity qualified by absence-ness of s'. This is to remove Objection 13.

In Objection 13, $-s$ was essentially identical with two entities a and b, but these may be verbally distinguished. While both are limited by reality$_1$ (*sattātva*), a is limited by a complicated property as well, namely 'absence-ness of absence of reality accompanied by the property peculiar to that which is other than quality or action' (*guṇa-karmânyatva-viśiṣṭa-sattâbhāvâbhāvatva*), which may be expressed more briefly 'absence-ness of s' (*sādhyâbhāvatva*); b is not qualified by this complicated property. Despite the fact that $-s$ in form a is essentially identical with $-s$ in form b, the locus-nesses described by a and b are not essentially identical. Insertion 9 requires that we choose that substratum of locus$_1$ to $-s$ which is described by the qualified $-s$. In the example of Objection 13 such a substratum is substance only and h (quality-ness) does not occur in it.

TEXT 61.2–4 (BI.36.16–37.3): Na câivaṃ kapi-saṃyogâbhāvavān sattvād ity

ādau niravacchinna-sādhyâbhāv-[1]âdhikaraṇatv[1]-âprasiddhyâvyāptir iti vācyam, kevalānvayiny abhāvād ity anena grantha-kṛtâivâsya doṣasya vakṣyamāṇatvāt.

VARIANT: (1) *K.*, -âdhikaraṇ-; but cf. the parallel passage 97.3–6 and Śiv. Miśra 60.19.

TRANSLATION: [Objection.] At this rate, the definition will not apply where [there is a valid inference] such as '[It] possess(es) absence of contact with a monkey, because it (is) real', since no unlimited locus$_1$ to $-s$ can be found.

[Answer.] One should not make this objection, for the author himself will admit this fault in the definition by the words "because it is not any of these where *s* is universal-positive" (Sect. III, end of text).

NOTES: *Objection 14.* In some inferences it is impossible to find an unlimited locus$_1$ resident in $l - s$ as required by Insertion 9.

Example. Inference: '[It] possess(es) absence of contact with a monkey, because [it possess(es)] reality'.

s:	−contact with a monkey	−*s*:	− −contact with a monkey (≐ contact with a monkey)	*h*:	reality

Every locus of $-s$ is also a locus of *s*.

Answer. Gaṅgeśa gives up the present definition of pervasion because it will not apply to cases where *s* is universal-positive (*kevalānvayi* cases). The present example is such a case, for *s* occurs where it does not occur as well as where it does. Your objection points out a fault in the definition but not in the author.

Note that actually Objection 14 is overcome by the second variant interpretation of this definition (*infra*, 83.1–5). It is overcome by splitting the unexampled term. However, Mathura refrains from using this technique here, since *s* is universal-positive and Gaṅgeśa has not claimed that the definition will fit a case where *s* is universal-positive.

In the *Siddhānta-lakṣaṇa* (T.C. II, 100–123) Gaṅgeśa offers a new definition of pervasion which will apply to *kevalānvayi* cases. The *siddhānta-lakṣaṇa* or conclusive definition is given in its simplest form by *Bh.P.*, 69: '*hetuman-niṣṭha--virahâpratiyoginā sādhyena hetor aikādhikaraṇyaṃ vyāptir ucyate*' — pervasion is *h*'s having a common locus with *s* and where *s* is not the counterpositive of an absence residing in locus of *h*. The conclusive definition also requires a great many insertions before it can be considered unexceptionable. It regulates the occurrence of *s* with reference to *h*, whereas this and the other four definitions of the *Vyāpti-pañcaka* regulate the occurrence of *h* with reference to *s*.

TEXT 61.5–10 (BI. 37.3–9): Na ca tathâpi [1]kapi[1]-saṃyogi-bhinnaṃ guṇatvād ity-ādau niravacchinna-sādhyâbhāvâdhikaraṇatvâprasiddhyâvyaptir, anyonyâbhāvasya vyāpya-vṛttitva-niyama-vādi-naye tasya kevalānvayy-anantargatatvād

iti vācyam, anyonyâbhāvasya vyāpya-vṛttitā-niyama-vādi-naye 'nyonyâbhāvântarâtyantâbhāvasya pratiyogitâvacchedaka-svarūpatve 'py avyāpya-vṛttimad-anyonyâbhāvâbhāvasya vyāpya-vṛtti-svarūpasyâtiriktasyâbhyupagamāt. Tac câgre sphuṭī-bhaviṣyati.

VARIANT: (1) BI. omits.

TRANSLATION: [Objection.] Even so, the definition will fail to apply where [there is a valid inference] such as '[It] (is) different from a locus of contact with monkey, because it (is) a quality', since an unlimited locus$_1$ to $-s$ cannot be found, and since such inferences are not included in *kevalānvayi* cases according to the opinion of those who claim that a mutual absence is of complete occurrence.

[Answer.] The above objection should not be made, for the opinion of those who claim that a mutual absence is of complete occurrence is that although the constant absence of any other mutual absence is in the form of the limitor of the counterpositive$_1$ [to the mutual absence], when there is a constant absence of a mutual absence of that which is a locus of an entity of incomplete occurrence, the nature of this constant absence is of complete occurrence and outside the scope [i.e., is of greater extension than the limitor of the counterpositive$_1$ to the mutual absence]. This will become clear later on.

NOTES: *Objection 15*. There are cases even where s is not universal-positive where no unlimited locus$_1$ to $-s$ can be found.

Example. Inference: '[It] (is) different from locus of contact with a monkey, because it (is) a quality'.

s:	$\dot{-}$ locus of contact with a monkey (*kapi-saṃogy-* *-anyonâbhāva*)	$-s$:	$- \dot{-}$ locus of contact with a monkey (*kapi-saṃogy-* *-anyonyâbhā-* *vābhāva*)	h:	quality,

Since $- \dot{-}x \doteq x_1$, $- \dot{-}$locus of contact with monkey $\doteq$ the property peculiar to locus of contact with monkey (*kapi-saṃyogitva*). This, according to the rule 'locus of the property peculiar to x is x' (cf. II, § 11 end) is essentially identical with 'contact with monkey' (*kapi-saṃyoga*).

$-s$ (contact with monkey) is of incomplete occurrence. No unlimited locus$_1$ to it can be found.

The objector accepts Mathura's excuse for not yet discussing cases where s is universal-positive, but brings up a case which some people at least regard as not universal-positive. These are the people who regard $\dot{-}$locus of contact with monkey as an entity of complete occurrence. Whether it is so or not is obviously debatable. Those who claim it is would say this of a tree with a monkey in it: "This tree is a locus of contact with monkey and of absence of contact with

monkey, but it is not different from a locus of contact with monkey. Things different from a locus of contact with monkey are quality etc." If $\dot{-}$locus of contact with monkey is of complete occurrence as these people claim, it is not universal-positive; cases of its absence (e.g., in this tree) can be found.

Answer. Those who claim that a mutual absence is of complete occurrence (and therefore not universal-positive), while they recognize that in most cases $- \dot{-}x \doteq x_1$, claim that if x is the locus of an entity (e.g., contact with monkey) of incomplete occurrence, this is not so, but that in these cases $- \dot{-}x$ is something quite different from x_1, and is of complete occurrence. To be precise, they claim that '$- \dot{-}$locus of contact with monkey' includes the whole tree, not simply the branch with which the monkey is in contact.

To explain 'This will become clear later on': The problem is again raised in connection with the fourth definition of pervasion (*infra*, 97.11–16), and is fully discussed in the *Viśeṣa-vyāpti* (*T.C.*, II, 130–164).

TEXT 63.1–5 (BI.37.10–15): Nanu tathâpi samavāyâdinā gaganâdi-hetuke idaṃ vahnimad gaganād ity ādāv ativyāptir, vahny-abhāvavati hetutâvacchedaka-samavāya[1]-sambandhena gaganâder avṛtteḥ. Na ca tal lakṣyam eva, hetutâvacchedaka-sambandhena pakṣa-dharmatvâbhāvāc câsad-dhetutva-vyavahāra iti vācyaṃ, tatrâpi vyāpti-bhramenâivânumiter anubhava-siddhatvāt, anyathā dhūmavān vahner ity-āder api lakṣyatvasya suvacatvāt.

VARIANT: (1) BI. inserts 'âdi'.

TRANSLATION: [Objection.] But now the definition will be so wide as to apply where [there is a false inference] such as 'This possess(es) fire, because [it possess(es)] ether [inhering in it]' etc., where h is ether etc. by inherence etc., for there is no occurrence of ether etc. in the locus of absence of [the s] fire, by the relation, inherence, which limits h_1. And if you say such cases are properly included in the definition but one calls these false inferences because h cannot qualify p by the relation that limits h_1, we would remind you that even in these cases the only reason that we seem to have an inference is that there is a false pervasion. If you do not admit this, then you may as well say that such cases of false inference as '[It] possess(es) smoke because [it possess(es)] fire' fall properly within the definition.

NOTES: *Objection 16*. When h occurs nowhere it will not occur in $l - s$. Therefore a false inference with such a h will appear true.

Example. Inference: 'This possess(es) fire because [it possess(es)] ether inhering in it'. [Note: *gagana* = ether or sky; the two are not distinguished.]

h is here inhering ether. Now, ether is not divisible into atoms, for it possesses maximum dimension (*Bh.P.*, 26). Accordingly, it is considered to be eternal, and since this is so, it cannot inhere in anything (II, § 49).

Since h occurs nowhere, it does not occur in $l - s$. Thus the above example seems to fit the definition of a true pervasion.

The inference, however, is false. It is false not only if we take 'this' to be a lake, but even if we take 'this' to be a mountain, for it is an inference where *h* cannot reside in *p* (*avṛtti-hetukânumiti*, Śiv. Miśra, 63.8). It suffers from the fallacy of *svarūpâsiddhi* (cf. *S.M.*, 72). The objection to *svarūpâsiddha* inferences is that they contain an unexampled (*asiddha*) term, and so cannot represent valid knowledge (cf. II, § 33, para. 2, and § 56, end).

It might be suggested that the pervasion here is all right, and that the thing wrong with the inference is its operation, since this is defined as the knowledge that a pervaded *h* occurs in *p*, and in the present example *h* does not occur in *p*. However, the cause of the inference is the pervasion. When inferring takes place, the inference is equivalent in truth value to the pervasion. If the inference is wrong, the pervasion is wrong also.

Before strengthening the definition by a new insertion, Mathura gives two more objections. Objection 16 is not answered until Text 79.1–2.

TEXT 63.6–8 (BI.37–15–18): Evaṃ dravyaṃ guṇa-karmânyatva-viśiṣṭa--sattvād ity-ādāv avyāptir, viśiṣṭa-sattvasya kevala-sattvânatirekitayā dravyatvâbhāvavaty api guṇâdau tasya vṛtter guṇe guṇa-karmânyatva-viśiṣṭa-sattêti pratīteḥ sarva-[1]jana[1]-siddhatvāt.

VARIANT: (1) BI. omits.

TRANSLATION: [Objection continued.] As the definition stands, it will fail to apply where [there is a valid inference] such as '[It] (is) a substance because [it possess(es)] reality qualified by the property peculiar to that which is other than quality or action'. Since qualified reality is essentially identical with pure reality, it will occur also in loci of absence of [the *s*,] substanceness, such as quality, for everyone recognizes that reality qualified by the property peculiar to that which is other than quality or action occurs in quality.

NOTES: *Objection 17*. When *h* is a qualified unit a true inference will appear false.

The objector's example has been explained in II, § 41.

This is similar to the fault pointed out in Objection 13 (Text 59.3–62.1), except that here *h* is the qualified unit instead of *s*. It is with regard to *h* that the definition now must be made more specific.

"Every one recognizes etc.": Although this is generally recognized, it is not admitted that the locus$_1$ in quality is described by this qualified reality; it is described only by pure reality.

TEXT 63.8–10 (BI.37.18–19): [1]Evaṃ[1] sattāvān dravyatvād ity-ādāv avyāptiś ca, sattâbhāvavati sāmānâdau hetutâvacchedaka-samavāya-sambandhena vṛtter aprasiddher iti cen na.

VARIANT: (1) BI. omits.

TRANSLATION: [Objection continued.] And the definition still will fail to apply where [there is a valid inference] such as '[It] possess(es) reality, because it (is)

a substance', for there is no occurrence [of anything] in $l - s$, generic character etc., by the relation, inherence, which is the limiting relation of h_1.

[Answer.] None of these objections should be made.

NOTES: *Objection 18.* The following true inference will appear false because one of the terms of the definiton is here unexampled.

Example. For inference see translation.

s:	reality	$-s$:	$-$reality	h:	substance$_1$ (limiting relation: H)
ls:	substance quality action	$l - s$:	generic character ultimate difference inherence absence		

Reality inheres in the first three categories (cf. II, § 26). $-s$ resides in the last four categories. Only the first three categories are capable of being inhered in (cf. II, § 49). Thus, nothing can occur in $l - s$ by the limiting relation of h_1. ⌜Rh_1⌝ occurrent$_1$ ⌞$l - s$⌟ is unexampled.

TEXT 64.1–4 (BI.37.19–38.1): Hetutâvacchedakâvacchinna-hetv-adhikaraṇatā-[1]nirūpita[1]-hetutâvacchedaka-sambandhâvacchinnâdheyatā-[2]pratiyogika[2]-viśeṣaṇatā-viśeṣa-sambandhena nirukta-sādhyâbhāvatva-viśiṣṭa-nirūpita-nirukta[3]-saṃsargaka-niravacchinnâdhikaraṇatâśraya-vṛttitva-sāmānyâbhāvasya [4]vivakṣitatvāt[4].

VARIANTS: (1) BI., -pratiyogika-; (2) BI., -nirūpita-; (3) BI. inserts 'sambandha'; (4) K., vivakṣitvāt.

TRANSLATION: [Answer. The above objections should not be made] because what is meant is: a generic absence of occurrent$_1$ to a substratum [viz., $l - s$] of that unlimited locus$_1$ the [limiting] relation of which is the aforementioned one and which is described by [an entity] qualified by absence-ness of s, absence of s being as before mentioned; [to this absence of occurrent$_1$ the counterpositive$_1$] being limited by a particular qualification relation where the adjunct is a superstratum$_1$ limited by the limiting relation of h_1 and described by locus$_1$ to h, which locus$_1$ is limited by the limiting properties of h_1.

NOTES: Notice first that '*viśeṣaṇatā-viśeṣa-sambandhena*' (particular qualification or peculiar relation) actually limits the c_1 to 'absence of occurrent$_1$'; it limits the absence only indirectly. The 'extraction' (II, § 31) of our text would be: '*viśeṣaṇatā-viśeṣa-sambandhâvacchinna-pratiyogitāka-vṛttitvâbhāva*' (an absence of occurrent$_1$ to which the counterpositive$_1$ is limited by P).

[Śiv. Miśra explains this by saying that the instrumental suffix ('*ena*' of '*sambandhena*') here means 'the counterpositive$_1$ to which is limited by' (*tṛtīyârtho 'vacchinna-pratiyogitvam*). He is proved right by what follows (64.5–65.2).]

Insertion 10. What appears in the text as the second half of the insertion (from

the first '*nirukta*' on) and in the translation as the first half (up to the semicolon) is a repetition of Insertion 9 and has been explained in the notes following 59.3–61.2. The rest is new, and is in a complicated form because it serves two purposes: first, to split the term that proved unexampled in Objection 18, and second, to remove Objection 17.

For general remarks on splitting a self-contradictory term, see II, § 57. The term that caused difficulty in Objection 18 was '$-\ulcorner Rh_1 \urcorner\, o_1 \llcorner l - s \lrcorner$'. This term becomes meaningless whenever such values are chosen for s and h (e.g., reality, substance-ness) as render impossible the occurrence of anything in $l - s$ by Rh_1. Esentially what Mathura has done here is to change the meaningless requirement to one that requires absence of $o_1 \llcorner l - s \lrcorner$ to reside by P in an entity in which $\ulcorner Rh_1 \urcorner\, o_1 \llcorner lh \lrcorner$ resides by P. A rough analogy would be to change 'There are no round triangles' to 'Triangularity is not a property of an entity of which rotundity is a property'.

The actual terms of Mathura's law can be shown diagrammatically as follows:

$$\begin{array}{ccc} \mathrm{sup}_1 & & o_1 \\ & \mathrm{P} & \\ h & & h \\ Rh_1 & & \mathrm{R} \\ lh & & l-s \end{array}$$

There must now be an absence of o_1 describing a c_1 limited by P (not by Rh_1 as formerly), of which relation (P) the adjunct is a superstratum$_1$ limited by Rh_1 etc. That is, instead of forbidding the relation h R $l - s$, as was done before, he now forbids the relation of o_1 P h that stands above it in the diagram. The relation P is now interposed between the self-contradictory fragments '$\ulcorner Rh_1 \urcorner$' and '$o_1 \llcorner l - s \lrcorner$' of the law as formerly expressed.

This is a good example of how Navya-nyāya manages to express in a single word facts that Western logic would express by a compound proposition. Its ability to do so derives from its construction of abstract properties. Thus, when x occurs in y by C, there is more involved to the Naiyāyika than the single relation C; there is a whole chain of further relations including the relation between the abstract o_1 and x, between o_1 and y, and so on.

The technique here employed can be shown more clearly by the following comparison.

$$\begin{array}{ccc} \mathrm{sup}_1 & & o_1 \\ & \mathrm{P} & \\ x & & x \\ R & & R \\ y & & z \end{array}$$

Western: '$(x \mathrm{R} y)$ implies $\sim(x \mathrm{R} z)$'

Navya-nyāya: A generic absence of $o_1 \llcorner z \lrcorner$, this absence describing a c_1 limited by P in which relation (P) the adjunct is $\ulcorner x_1, \mathrm{R} \urcorner\, \mathrm{sup}_1 \llcorner y \lrcorner$.

Applying Insertion 10 to the example of Objection 18:

s:	reality	$-s$:	$-$reality	h:	substance$_1$ (limiting relation: H)
ls:	substance etc.	$l-s$:	generic character etc.		

Here there can be found:

(1) occurrent$_1$ to $l-s$ which occurrent$_1$ subsists by P. Such occurrent$_1$ resides in nameable$_1$, nonreality, and all entities that occur in $l-s$;

(2) superstratum$_1$ limited by Rh_1. Such superstratum$_1$ resides in substance-ness, for substance-ness is a superstratum to substance by inherence;

(3) an abence of (1) when the adjunct of the particular qualification relation it contains is (2). This absence in this example, as Mathura later points out, is universal. Occurrent$_1$ to a locus of $-$reality cannot reside in those entities in which superstratum$_1$ limited by inherence resides. In its universality our absence here is like 'absence of quality limited by contact' but our absence differs from this in that it is not meaningless.

We may now take up the portion of Insertion 10 that removes Objection 17. It contains the following terms:

$$\begin{array}{rl} & x \leftarrow \ulcorner Rh_1 \urcorner \text{ superstratum}_1 \\ & \downarrow \\ \ulcorner gh_1 \urcorner \text{ locus}_1 \text{ to } h \rightarrow & lh \end{array}$$

The entity x, if it is in this position, must of course be h. When x occurs in a locus of h, superstratum$_1$ resides in x and locus$_1$ *to h* resides in lh. Mathura defines these terms in what might be called a circular manner. The superstratum$_1$ is limited by Rh_1 (i.e., by the relation between x and lh; cf. II, § 20). The locus$_1$ is limited by gh_1, that is, by a describer limitor (cf. II, § 22, last two paragraphs). There is a reason for employing this circular manner of definition rather than a straightforward one. In Ojection 17, the h (x of the diagram above) was qualified reality. This qualified reality is essentially identical with pure reality. To find a difference Mathura passes to the loci of these realities. The locus$_1$ described (or limited) by the limiting properties of qualified reality is not esentially identical with the locus$_1$ described (or limited) by the limiting propetries of pure reality (II, § 41). The circular definition here is in order to specify how locus$_1$ to h is limited.

Applying Insertion 10 to the example of Objection 17 (cf. diagram in II, § 41):

Only in qualified reality is there superstratum$_1$ limited by inherence and described by a locus$_1$ limited by gh_1 (reality *and* otherness than quality and action). In pure reality the locus$_1$ involved in the requirement is not limited by

gh$_1$, but only by reality$_1$. Accordingly, it makes no difference if there does reside in pure reality occurrent$_1$ to $l - s$. The inference is still valid.

Mathura later (67.1–4) gives another method of avoiding Objection 17 which renders the circular definition of superstratum$_1$ unnecessary. The only restriction regarding the superstratum$_1$ that need then be kept is that it be limited by *Rh*$_1$. In other words, one may then strike out the words of Insertion 10 through the first '*nirūpita*'.

TEXT 64.5–65.2 (BI.38.1–8): Vṛttitvaṃ ca na hetutâvacchedaka-sambandhena vivakṣaṇīyam. Asti ca sattāvān dravyatvād ity-ādau sattâbhāvâdhikaraṇatâśraya--vṛttitvasya hetutâvacchedaka-samavāya-sambandhâvacchinnâdheyatā-[1]pratiyogika[1]-viśeṣaṇatā-viśeṣa-sambandhena sāmānyâbhāvo dravyatvâdau, samavāya--sambandhâvacchinnâdheyatā-[1]pratiyogika[1]-viseṣaṇatā-viśeṣa-sambandhâvacchinna-pratiyogitāka-sattâbhāvâdhikaraṇatâśraya-vṛttitvâbhāvasya vyadhikaraṇa--sambandhâvacchinna-[2]pratiyogitākâbhāvatayā[2] saṃyoga-sambandhâvacchinna--guṇâbhāvâder iva kevalānayitvāt.

VARIANTS: (1) BI., -nirūpita-; (2) BI., -âbhāvatayā.

TRANSLATION: And it is not intended that the occurrent$_1$ be limited by the limiting relation of *h*$_1$. And [thus the definition no longer contains an unexampled term, for] in such valid inferences as '[It] possess(es) reality, because [it possess(es)] substance-ness' etc., there *is* resident in substanceness etc. a generic absence of occurrent$_1$ to the substratum of locus$_1$ to —reality, [the counter-positive$_1$ to this generic absence] being limited by a particular qualification relation of which the adjunct is a superstratum$_1$ limited by the R*h*$_1$, inherence. [There is sure to be such an absence,] for absence of occurrent$_1$ to the substratum of locus$_1$ to —reality, the counterpositive$_1$ to which [absence of occurrent$_1$] is limited by a particular qualification relation in which the adjunct is a superstratum$_1$ limited by a relation of inherence, is an absence whose counterpositive$_1$ is limited by a contradictory relation; hence it is universal, like 'absence of quality limited by a relation of contact'.

TEXT 65.2–4 (BI.38.8–10): Dravyaṃ sattvād ity-ādau ca dravyatvâbhāvâdhikaraṇa-guṇâdi-vṛttitvasyâiva samavāya-sambandhâvacchinnâdheyatā-[1]pratiyogika[1]-viśeṣaṇatā-[2]viśeṣa[2]-sambandhena sattāyām sattvān nâtivyāptiḥ.

VARIANTS: (1) BI., -nirūpita-; (2) BI. omits.

TRANSLATION: And the definition is not so wide as to apply where [there is a false inference] such as '[It] (is) a substance, because [it possess(es)] reality', for there *does* reside in reality occurrent$_1$ to such loci of —substance-ness as quality etc., this occurrent$_1$ being limited by a particular qualification relation of which the adjunct is a superstratum$_1$ limited by a relation of inherence.

NOTES: The full form of the inference would be '[It] possess(es) substance-ness, because [it possess(es)] reality'. Cf. II, § 11.

TEXT 65.5–6 (BI.38.10–11): Dravyaṃ viśiṣṭa-sattvād ity-ādāv avyāpti-vāraṇāya [1]nirūpitântam[1] ādheyatā-viśeṣaṇam.

VARIANT: (1) BI., pratiyogikântam.

TRANSLATION: [The portion of the insertion] that modifies 'superstratum$_1$' up through the word '*nirūpita*', is to avoid the fault of nonpervasion in such cases [of valid inference] as '[It] (is) a substance, because [it possess(es)] qualified reality'.

TEXT 67.1–4 (BI.38.11–14): Vastutas tu etal-lakṣaṇa-kartṛ-[1]mate[1] viśiṣṭa-sattvaṃ viśiṣṭa-nirūpitâdhāratā-sambandhenâiva dravyatva-vyāpyaṃ na tu samavāya-sambandhena, tathā ca [2]nirūpitântam[2] ādheyatā-viśeṣaṇam anupādeyam eva. Tad-upādane ca hetutâvacchedaka-bhedena kārya-kāraṇa-bhāva-bhedâpatteḥ.

VARIANTS: (1) BI., -naye; (2) K., pratiyogika-nirūpitântam; BI., pratiyogikântam.

TRANSLATION: But actually, in the opinion of the author of this definition, qualified reality is not pervaded by substance-ness by a relation of inherence, but only by a relation where the locus$_1$ is described by a qualified entity. Accordingly, [the portion of the insertion] that modifies '*ādheyatā*' up through the word '*nirūpita*' should be rejected. Another reason [for rejecting this portion] is that if one retains it, there will be a cause-effect variation [of the occurrent$_1$] as the limiting properties of h_1 vary.

NOTES: There is no need to bring the locus of h into the definition in order to overcome Objection 17. Thus, one may omit a portion of Insertion 10. For the new method by which the problem posed in Objection 17 is solved; see II, § 54.

By omitting a portion of Insertion 10 one gains in simplicity, for the full insertion requires a variable, namely gh_1, that the abbreviated version dispenses with. Needless variables cause 'heaviness' (II, § 21) and are to be rejected by a principle similar to 'Occam's razor'.

TEXT 79.1–2 (BI.38.14–16): Hetutâvacchedaka-sambandhena sambandhitve satîty anenâpi viśeṣaṇād vahnimān gaganād ity ādau nâtivyāptiḥ.

TRANSLATION: By inserting also 'so long as there is a relation by the limiting relation of h_1' one avoids the fault of overpervasion in such cases [of false inference] as '[It] possess(es) fire because [it possess(es)] ether [inhering in it]'.

NOTES: *Insertion 11*. One must require that h can be related by Rh_1. This answers Objection 16, for in the example given in that objection the h, ether, cannot inhere. By means of Insertion 11 the pervasion as well as the inference may be shown to be false. Furthermore, if in this example one changes Rh_1 to some realtion by which ether can be related, such as contact, the inference will still be shown to be false because h will occur in $l - s$, e.g., ether may be in contact with a lake.

Insertion 11 is given in the form of a locative absolute and is to be prefixed to

Insertion 10. The effect will be to produce a double requirement, thus: pervasion is where there is a relation as required in Insertion 11 and where there is a $-$occurrent$_1$ as required in Insertion 10'.

TEXT 79.2–80.2 (BI.38.16–39.1): Nanu tathâpi ubhayatvam ubhayatrâiva paryāptaṃ na tv ekatrêti siddhāntâdare [1]ghaṭatvavān ghaṭa-paṭobhayatvād[1] ity ādau paryāpti-sambandhena [2]hetutāyām[2] ativyāptiḥ, ghaṭatvâbhāvavati hetutâvacchedaka-paryāpty-ākhya-sambandhena hetor avṛtteḥ,[3] ghaṭo na ghaṭa-paṭobhayam itivad ghaṭatvâbhāvavān na ghaṭa-paṭobhayam iti pratīter[3] iti cen na.

VARIANTS: (1) This is K.'s reading except that K. has the misprint 'ôbhayatvādad'; BI. is very different: 'ghaṭatvavān ghaṭatva-tad-abhāvavad-ubhayatvād'; see notes below; (2) BI., hetutve; (3) BI. is very different: 'ghaṭo ghaṭa-paṭôbhayatvam itivad ghaṭo ghaṭatva-tad-abhāvavad-ubhayatvam ity apratīter'; see notes below.

TRANSLATION: [Objection.] But still, if one admits the theory that two-ness is related by *paryāpti* to two and not to each, the definition will be so wide as to apply in false inferences where *h* occurs by *paryāpti*, e.g., 'It (is) a pot because it (is) both a pot and a cloth'. Here *h*, pot-and-cloth-ness, does not occur in the locus of $-$potness by *paryāpti* which is the limiting relation of h_1, for common sense tells us that just as 'pot' [i.e., locus of pot-ness] is not 'both pot and cloth', so 'locus of $-$pot-ness' is not "both pot and cloth'.

[Answer.] This objection should not be made.

NOTES: *Objection 19.* If we accept the theory that two-ness is related by *paryāpti* to two and not to each of the two (cf. II, § 51), any false inference where *h* subsists by *paryāpti* will appear true.

Example. Inference: (literally) '[It] possess(es) pot-ness because [it possess(es)] pot-and-clothness'. Here

- ***p***: pot;
- ***s***: pot-ness;
- ***h***: pot-and-clothness; this is similar to two-ness; it resides only in cases of pot-and-cloth;
- ***lh***: both pot and cloth;
- $l - s$: locus of $-$potness (e.g., cloth).

h does not occur in $l - s$, or, as Mathura puts it, $l - s$ is not *lh*.

BI. Variant (from 'e.g.' to end of Objection): '[It] (is) a pot because it (is) both a pot and not a pot'. Here *h*, 'pot-and-not-potness', does not occur in the locus of $-$potness, for just as " 'pot' is 'both pot and cloth' " is not common sense, so " 'pot' is 'both pot and not pot' " is not common sense.

The BI. example is more amusing, but the reason adduced at the end [viz., what follows 'for just as'] is a *non sequitur*; it is a reason for the inference being wrong, not a reason for *h* not occurring in $l - s$.

TEXT 81.1–4 (BI.39.2–4): Tādṛśa-siddhāntâdare hetutâvacchedaka–sambandhena sādhya-sâmānâdhikaraṇatve satîty anenâpi viśeṣaṇīyatvāt [1]. Ata eva niviśatāṃ vā vṛttimattvaṃ sādhya-sāmān[2]âdhikaraṇyaṃ[2] vêti Kevalānvayi-granthe Dīdhiti-kṛtaḥ. [3]Tad-viśeṣaṇād vahnimān gaganād ity-ādau nâtivyāptiḥ[3].

VARIANTS: (1) BI. adds 'iti'; (2) BI., âdhikaraṇatvaṃ; (3) BI. omits.

TRANSLATION: [Answer. This objection should not be made,] for if one admits such a theory, all one need do is insert also 'there being a common locus of *h* with *s* [in which locus *h* resides] by that relation which is the limiting relation of h_1'. This is why the author of the *Dīdhiti*, in the Section on Kevalānvayi, says "One must insert either that [*h*] must occur [somewhere] or that there must be a common locus [of *h* and *s*]". If one makes such an insertion, the definition will not apply in such cases of false inference as '[It] possess(es) fire, because [it possess(es)] ether [inhering in it]'.

NOTES: *Insertion 12.* If one accepts the theory of *paryāpti*, one must prefix to Insertion 10 'pervasion is where there is a common locus of *h* with *s*, *h* residing in this locus by Rh_1, and . . .'. Obviously there is no such common locus in the example of Objection 19; hence, the example is shown to be a false inference. But in the example of Objection 16 also, there was no common locus of *h* and *s*. This example also will be shown to be a false inference. Thus, Insertion 12 renders Insertion 11 unnecessary.

The quotation is from Raghunātha's *Dīdhiti*, *R. Jāg.* II, p. 823, line 3, where actually the alternatives are reversed: '*niviśatām vā tena sādhya-sāmānâdhikaraṇyaṃ vṛttimattvam vā*'. Raghunātha is referring to ways of overcoming what appears in Mathura as Objection 16. Either alternative will cure this. However, that which simply requires *h* to occur somewhere will not overcome Objection 19.

TEXT 82.1–6 (BI.39.5–10): Kecit tu nirukta-sādhyâbhāvatva-viśiṣṭa-nirūpitā yā viśeṣaṇatā-sambandhena yathôkta-sambandhena vā niravacchinnâdhikaraṇatā tad-āśraya-vyakty-avarttamānaṃ hetutâvacchedaka-sambandhâvacchinna-yaddharmâvacchinnâdhikaraṇatva-sāmānyaṃ tad-dharmavattvam vivakṣitam. Dhūmavān vahner ity-ādau parvatâdi[1]-niṣṭha-vahny-adhikaraṇatā-vyakter dhūmâbhāvâdhikaraṇâvṛttitve 'pi ayogolaka-niṣṭha-vahny-adhikaraṇatā-vyakter atathātvān nâtivyāptir ity āhuḥ.

VARIANT: (1) K. omits 'âdi'.

TRANSLATION: But some say the definition should be taken to mean: [Pervasion is] the possession [by *h*] of those properties which together with the limiting relation of h_1 limit a generic locus_1 such as has no manifestation in a substratum of that unlimited locus_1 whose [limiting] relation is either [absential] particular qualification [cf. Insertion 5] or the aforementioned one [cf. Insertion 6] and which is described by [an entity] qualified by absence-ness of *s*, absence of *s* being as before mentioned. The definition will not then apply in such false cases of inference as: '[It] possess(es) smoke because [it possess(es)] fire', for al-

though the manifestation of locus_1 to fire that resides in a mountain etc. does not occur in a locus of $-$smoke, the manifestation of locus_1 to fire that occurs in a hot iron does so occur.

NOTES: Insertion 10, as supplemented either by Insertion 11 or by Insertion 12, depending on one's views of *paryāpti*, represents Mathura's last word on Gaṅgeśa's first definition. But he adds two variant interpretations of the definition which he attributes vaguely to 'some people' and 'others', and on neither of which does he comment.

Variant Interpretation 1. The locus_1 to fire that resides in mountain is one manifestation (*vyakti*) of locus_1 to fire; other manifestations reside in hearth, in forest, etc. The abstraction of all these manifestations is generic locus_1 (*adhikaraṇatva-sāmānya*) to fire. Cf. II, § 22, last para.

Variant Interpretation 1 requires that h must have residing in it properties x such that no manifestation of $\ulcorner x_1, Rh_1 \urcorner$ generic locus_1 may reside in a locus of $-s$. In the false inference '[It] possess(es) smoke because [it possess(es)] fire', manifestations of $\ulcorner gh_1, Rh_1 \urcorner$ locus_1 reside in mountain, hot iron, etc. Mountain is not a locus of $-s$, but hot iron is.

For '$l - s$' the interpreter substitutes the longer and more exact expression 'substratum of unlimited locus_1 etc.' exactly as given in Insertions 9 and 10.

The essential difference of Variant Interpretation 1 from Mathura's insertions is this: Mathura's insertions forbid the occurrence of h in $l - s$ whereas this interpretation prohibits any lh from being a $l - s$.

TEXT 83.1–5 (BI.39.11–16): Anye tu hetutâvacchedaka-sambandhâvacchinna--hetutâvacchedakâvacchinna-svâdhikaraṇatâśraya-vṛtti-yan-niravacchinnâdhikaraṇatvaṃ tad-avṛtti-nirukta-sādhyâbhāvatva-viśiṣṭa-nirūpita-yathôkta-sambandhâvacchinnâdhikaraṇatātvakatvam iti viśeṣaṇa-viśeṣya-bhāva-vyatyāse tātparyam. Sva-padaṃ hetu-param. Itthaṃ ca kapi-saṃyogâbhāvavān sattvāt kapi--saṃyogi-bhinnaṃ guṇatvād ity-ādāv api nâvyāptir ity āhur iti saṃkṣepaḥ.

TRANSLATION: Others express the meaning [of the first definition] by reversing the qualificand and qualifier, thus: [Pervasion is h's] being of such a sort that *locus_2* limited by the aforementioned relation and described by [an entity] qualified by absence-ness of s, absence of s being as before mentioned, *does not occur* in an unlimited locus_1 that occurs in the substratum of locus_1 to it [viz., to h], this latter locus_1 being limited by the limiting relation and properties of h_1. The word 'it' (*sva*) refers to h. The definition will not then fail to apply even in such cases of valid inference as: '[It] possess(es) absence of contact with a monkey, because [it possess(es)] reality', and '[It] (is) different from locus of contact wtih a monkey, because it (is) a quality'.

Thus briefly.

NOTES: *Variant Interpretation 2.* This interpretation introduces a new concept, locus_2 to $-s$. This is the class character peculiar to all cases of locus_1

to $-s$. It is a limitor of generic locus$_1$ to $-s$ (*sādhyâbhāva-nirūpitâdhikara-ṇatva-sāmānya*).

In the inference: '[It] possess(es) contact with a monkey because it (is) this tree', we have the following terms and properties:

s: contact with a monkey — $-s$: $-$contact with a monkey — h: this tree$_1$

$l-s$: this tree $\leftarrow$ lim. l_1 $\leftarrow$
$l-s$: quality $\leftarrow$ unlim. l_1 $\leftarrow$ | l_2 to $-s$ — l_1 to $h \rightarrow lh$: this tree
$l-s$: action $\leftarrow$ unlim. l_1 $\leftarrow$

Locus$_2$ to $-s$ resides in a limited locus$_1$ which resides in a substratum, viz., this tree, of locus$_1$ to h, but

the unlimited locus-nesses in which locus$_2$ to $-s$ resides, reside in quality, action, etc. and these are not substrata of the locus$_1$ to h.

The above example fits the present interpretation of the first definition of pervasion. Hence, the inference is shown to be true.

Mathura points out a difference between this interpretation and the preceding one: qualificand and qualifier have been reversed. Variant Interpretation 1 said in effect that no lh may be an unlimited $l-s$. The present insertion says in effect that no $l-s$ may be unlimited and a lh.

The chief distinction of the present interpretation, however, is not that it reverses qualificand and qualifier, but that it splits the term 'unlimited locus$_1$ to $-s$' which was found to be unexampled in Objection 14 and 15. The present interpretation says nothing about unlimited locus$_1$ *to* $-s$. The description 'to $-s$' is here attached to 'locus$_2$'. The advantage of this change can be clearly seen by applying Variant Interpretation 2 to the inference of Objection 14.

s: $-$contact with a monkey — $-s$: contact with a monkey — h: reality

$l-s$: this tree $\leftarrow$ lim. l_1 $\leftarrow$ | | $\rightarrow lh$: this tree
$l-s$: this roof $\leftarrow$ lim. l_1 $\leftarrow$ | l_2 to $-s$ — l_1 to h | $\rightarrow lh$: this roof
$l-s$: this garden $\leftarrow$ lim. l_1 $\leftarrow$ | | $\rightarrow lh$: this garden

Locus$_2$ to $-s$ resides in limited locus-nesses which reside in substrata, viz., this tree, this roof, this garden, of locus$_1$ to h, but

locus $_2$ to $-s$ does not reside in an unlimited locus$_1$ that resides in a substratum of locus$_1$ to h.

There is no unexampled term here, for examples can be found of

(1) locus$_2$ to $-s$. This is found in the various limited locus-nesses.

(2) unlimited locus$_1$ occurring in a substratum of locus$_1$ to h. Such unlimited locus$_1$ can be found in this tree etc; it may be 'unlimited locus$_1$ to reality' or

'unlimited locus$_1$ to this-tree-ness'. The fact that 'unlimited locus$_1$ to contact with a monkey' cannot be found makes no difference, for the present interpretation does not specify the describer of this unlimited locus$_1$.

(3) —occurrent$_1$ of (1) in (2). This absence is universal and meaningful.

The example of Objection 15, '[It] (is) different from locus of contact with a monkey, because it (is) a quality', also can be shown by the present interpretation to be a valid inference, and this without recourse to the complicated theory that $- \dot{-}x$ does not equal x_1 in those cases where x is the locus of an entity of incomplete occurrence (cf. notes following 61.5–10). We may allow $-s$ in the example to be 'contact with a monkey', and still show the example to be a valid inference as we did that of Objection 14.

Variant Interpretation 2 is in some ways the most interesting insertion in the *V.P.R.* It allows Gaṅgeśa's first definition to apply to those *kevalānvayi* cases where *s* is of incomplete occurrence. It is unfortunate that Mathura does not comment on this interpretation. One cannot even tell whether he accepts it or not. If we take K.'s reading in 101.10–18 below, he does accept it; if we take the BI. reading, he does not. One thing is certain: such an interpretation was either unthought of or disapproved of by Gaṅgeśa, or he would have modified his statement that all five definitions fail in cases where *s* is universal-positive.

TEXT 83.6: [1]Iti Śrī-Mathurānātha-Tarkavāgīśa-viracite Vyāpti-pañcaka-rahasye prathama-lakṣaṇam[1].

VARIANT: (1) BI. omits.

TRANSLATION: Herewith the first definition in the *Vyāpti-pañcaka-rahasya* of Śrī-Mathurānātha-Tarkavāgīśa.

THE SECOND DEFINITION

'SĀDHYAVAD-BHINNA-SĀDHYÂBHĀVAVAD-AVṚTTITVAM'

TEXT 85.1–4 (BI.39.17–21): Lakṣaṇântaram āha sādhyavad-bhinnêti. Sādhyavad-bhinno yaḥ sādhyâbhāvavān tad-avṛttitvam [1]ity[1] arthaḥ. Kapi-saṃyogy etad-vṛkṣatvād ity-ādy-avyāpya-vṛtti-sādhyakâvyāpti-vāraṇāya sādhyavad-bhinnêti sādhyâbhāvavato viśeṣaṇam iti prāñcaḥ. Tad asat, sādhyâbhāvavad ity asya vyarthatâpatteḥ, sādhyavad[2]-bhinnâvṛttitvam ity asyâiva saṃyaktvāt[2].

VARIANTS: (1) K. omits; (2) BI., -bhinnâvṛttitvasyâiva saṃyaktvāt. BI. notices another reading: '-bhinnâvṛttitvam ity asyâiva vyāptitvāt'.

TRANSLATION: [The author] gives another definition, beginning '*sādhyavad-bhinna* etc.'. The Old School took this to mean: '—occurent$_1$ [resident in *h*] to that locus of $-s$ which is different from locus of *s*', considering that locus of $-s$ was thus qualified in order to avoid non-pervasion in such cases [of valid inference] as: '[It] possess(es) contact with a monkey, because it (is) this tree' etc., where *s* is of incomplete occurrence. This [interpretation] is wrong, for it would

render 'locus of $-s$' useless, since the meaning could be properly expressed by '$-$occurrent$_1$ [resident in h] to that which is different from locus of s' alone.

NOTES: The inference of the monkey and the tree (Objection 12) contained the following terms:

s:	contact with a monkey	$-s$:	$-$contact with a monkey	h:	this-tree$_1$
		$l'-s$:	this tree		
		$l''-s$:	quality		

In order to include this among valid inferences, 'substratum of unlimited locus$_1$ to $-s$' was inserted in Definition 1 (Insertion 9). This led to difficulties where no unlimited locus$_1$ to $-s$ could be found.

The Old School (by which Mathura probably means pre-Raghunātha Nyāya) construed the Second Definition thus: h must not occur in that $l-s$ which is different from ls. In the above inference 'that $l-s$ which is different from ls' is 'quality'. 'This tree' is a $l-s$ which is the same as ls. The trouble with this interpretation is that the Second Definition could have expressed just this without mentioning '$l-s$'. If this *is* its meaning, there is no difference between the Second and the Fifth Definition except that the Second contains a useless term.

TEXT 88.1–3 (BI.40.1–3): Navyās tu sādhyavad-bhinne sādhyâbhāvaḥ sādhyavad-bhinna-sādhyâbhāvas tadvad-avṛttitvam iti saptamī-tatpuruṣôttaram matup-pratyayaḥ, tathā ca sādhyavad-bhinna-vṛttir yaḥ sādhyâbhāvas tadvad--avṛttitvam [1]ity[1] arthaḥ.

VARIANT: (1) K. omits.

TRANSLATION: But the New School takes '*sādhyavad-bhinna-sādhyâbhāva*' as a *tatpuruṣa* compound consisting of two parts: '*sādhyavad-bhinna*' and '*sādhyâbhāva*', of which the first has the sense of the locative case, the whole compound being followed by the possessive suffix '*$-$vant*'. Thus the meaning of the definition is: '$-$occurrent$_1$ [resident in h] to the locus of that $-s$ which occurs in what is different from locus of s'.

TEXT 89.1–4 (BI.40.3–7): Evaṃ ca sādhyavad-bhinna-vṛttîty anuktau saṃyogī dravyatvād ity-ādāv avyāptiḥ, saṃyogâbhāvavati dravye dravyatvasya vṛtteḥ, tad-upādāne ca saṃyogavad-bhinna-vṛttiḥ saṃyogâbhāvo guṇâdi-vṛttiḥ saṃyogâbhāva evâdhikaraṇa-bhedenâbhāva-bhedāt tadvad-avṛttitvān nâvyāptiḥ.

TRANSLATION: And thus, if one were to omit 'which occurs in what is different from locus of s', the definition [would be the same as the First Definition and so] would fail to apply in such cases [of valid inference] as '[It] possess(es) contact because it (is) a substance', for [the h,] substance-ness, occurs in substance which is a locus of $-$contact. But when one does not omit it, the $-$contact occurring in what is different from ls is that $-$contact which occurs in quality etc., since absences differ according to their loci. Accordingly, there is no occur-

rence [of *h*] in the locus of such an absence, and so the case is included in the definition.

NOTES: The inference here given as an example is exactly like the inference of the monkey and the tree:

s: contact	$-s$: $-$contact	*h*: substance$_1$
	$l' - s$: substance	
	$l'' - s$: quality	

The 'new interpretation' of the Second Definition is based on the theory that absences differ as their loci differ. Referring to the example above, we can imagine one absence of contact, which resides in substance, and a second absence of contact, which resides in quality. Definition 2, thus interpreted, says that *h* must not occur in the locus (quality) of that absence (the second absence) which resides in what is different from *ls* (substance).

Actually, the 'new interpretation' renders the Second Definition nugatory, for, as far as I know, no reputable Naiyāyika from the time of Raghunātha has allowed absences to differ as their loci differ. Mathura will point out later that not all absences differ in this way, but difference even in the special type of absence to which he limits it is denied by Raghunātha (*Ragh.* 4–6) and Jagadīśa (I, 78, lines 20–22). Mathura himself, when summing up (101.18–20 below), admits there is no evidence for such differences of absences, but this does not hinder him from a provisional acceptance of the theory here. This acceptance allows him, in what immediately follows, to give a subtle, if rather useless, analysis of the Second Definition.

Mathura has already shown that '*sādhyavad-bhinna*' cannot be omitted from the present definition. He now proceeds to show that under the 'new interpretation' every other word of the definition is necessary.

TEXT 90.1–3 (BI.40.7–9): Na ca tathâpi sādhyavad-bhinnâvṛttitvam ity evâstu kiṃ sādhyâbhāvavad ity anenêti vācyam. Yathôkta-lakṣaṇe tasyâpraveśena vaiyarthyâbhāvāt, tasyâpi lakṣaṇântaratvāt.

TRANSLATION: [Objection.] Let [the definition] stand simply as '$-$occurrent$_1$ to that which is different from *ls*'. What is the use of [the portion] 'in that $l - s$'?

[Answer.] The objection is improper, because in the definition as now interpreted one does not avoid uselessness by omitting this [portion]. Furthermore, that [viz., your suggested abbreviation] is a different definition, [being Gaṅgeśa's Fifth Definition].

NOTES: '*Sādhyâbhavavat*' cannot be omitted. Śiv. Miśra (90.7–12) and the Ṭippanī on BI. 40 explain why. '*Sādhyâbhāvavat*' is not now modified by an adjective compound '*sādhyavad-bhinna*'. Instead, '*sādhyavad-bhinna*' is a noun compound standing in a case relation to an element, viz., '*sādhyâbhāva*', of the

compound '*sādhyâbhāvavat*'. If one were now to omit '*sādhyâbhāvavat*', the construction (*anvaya*) would be destroyed. There would be no element to go with the locative-case sense of '*sādhyavad-bhinna*'. Thus, under the new interpretation, '*sādhyavad-bhinna-sādhyâbhāvavad-avṛttitvam*' is not a compound containing a useless qualifier (*tasya vyartha-viśeṣaṇa-ghaṭitatvam nâsti*).

TEXT 90.3–5 (BI.40.9–11): Na ca tathâpi sādhyavad-bhinna-vṛttir yas tadvad-avṛttitvam [1]ity[1] evâstu kiṃ sādhyâbhāva-padenêti vācyam. Tādṛśa-dravyatvâdimad-vṛttitvād asambhavâpatteḥ.

VARIANT: (1) BI. omits.

TRANSLATION: [Objection.] Let it [viz., the definition] stand simply as '—occurrent$_1$ to the locus of that which occurs in what is different from *ls*'. What is the use of the word '—*s*'?

[Answer.] The objection is improper. The proposed definition would be impossible, because [any *h*] will occur in the locus of substance-ness etc., which is such.

NOTES: '*Sadhyâbhāva*' cannot be omitted. If one substitutes a relative pronoun for the portion '*sādhyâbhāva*' of '*sādhyâbhāvavat*', one can still construe the definition according to the new interpretation. However, the definition will then fail to cover any valid inference whatever. It will be impossible (*asambhava*). For example, in the valid inference '[It] possess(es) fire because [it possess(es)] smoke', the *h* (smoke) *does* occur in the locus (substance) of substance-ness. Substance-ness occurs in what is different (a lake) from that (a mountain) which is a locus of the *s* (fire).

TEXT 90.5–6 (BI. 40.11–13): Sādhyâbhāvêty atra sādhya-padam apy ata eva, dravyatvâder api dravyatvâbhāvâbhāvatvād, bhāva-rūpâbhāvasya câdhikaraṇa-bhedena bhedâbhāvāt.

TRANSLATION: In the [compound word] '—*s*' the word '*s*' is included for the same reason [i.e., to avoid an impossibility], for substance-ness etc. [is an absence since it] is essentially identical with — —substance-ness, and that absence which is in the form of a presence cannot differ as its loci differ.

NOTES: '*Sādhya*' cannot be omitted. One cannot let the definition require simply thart *h* 'not occur in the locus of that absence which occurs in what is different from *ls*'. One could substitute 'substance-ness' for 'that absence' since substance-ness is essentially identical with — —substance-ness. Note that this suggestion must be given up if one regards the Second Definition as being drawn on the theory that a double absence is not essentially identical with a presence (cf. II, § 40). To suppose that it is so drawn is one of two permissible interpretations (92.6–8 below). If one chooses this alternative, one must give a different reason for the inclusion of '*s*' in the portion '*l* — *s*' of the definition. Mathura gives a different reason in 92.9–14 below.

Since we are now supposing that absences differ according to their loci, one

might suppose that the – –substance-ness that resides in the substances in which *h* resides is different from the – –substance-ness that resides in lake etc. But Mathura claims that even if we allow some absences to differ as their loci differ, we cannot allow absences that are essentially identical with presences so to differ. If we did, substance-ness, reality, etc. would no longer be generic characters (*jāti*) but properties (*upādhi*).

After showing that each word of the definition is necessary, the normal process of commenting would be to raise possible objections to the definition and cure them by insertions. However, the necessary insertions for Definition 2 can be readily supplied from Definition 1. Mathura passes over them to one serious objection that is peculiar to this definition.

TEXT 91.1–92.6 (BI.40.14–41.1): Nanu tathâpi [1]ghaṭatva-ghaṭâkāśa-saṃyogâ[1]nyatarâbhāvavān gaganatvād ity[2]-ādau[2] ghaṭânadhikaraṇa-deśâvacchedena ghaṭâkāśa-saṃyogâbhāvasya gagane sattvāt sad-dhetutayâvyāptiḥ, sādhyavad-bhinne ghaṭe varttamānasya sādhyâbhāvasya ghaṭâkāśa-saṃyoga-rūpasya gagane 'pi sattvāt tatra ca hetor vṛtteḥ. Na ca sādhyavad-bhinna-vṛttitva-viśiṣṭa-sādhyâbhāvavattvaṃ vivakṣitam iti vācyam, sādhyâbhāva-pada-vaiyarthyâpatteḥ, sādhyavad-bhinna-vṛttitva-viśiṣṭavad-avṛttitvasyâiva saṃyaktvād.

VARIANTS: (1) BI., ghaṭâkāśa-saṃyoga-ghaṭatvâ; (2) BI., atra.

TRANSLATION: [Objection.] But now, the definition will fail to apply where [there is a valid inference] such as '[It] possess(es) absence of the alternation pot-ness/contact of pot and ether, because it (is) ether'. The *h* is correct here [and the inference valid], for there is in ether absence of 'contact of pot and ether' as limited to that area [of ether] which is not a locus of pot. Yet the definition is at fault, since that [case of] –*s* which occurs in what is other than the *ls* pot, is in the form of 'contact of pot and ether' and occurs in ether; and the *h* [ether-ness] occurs in ether. And you cannot say that what is meant is [that *h* must not occur in] a locus of that –*s* which is qualified by occurrent$_1$ to [i.e., occurrent$_1$ described by] that which is other than locus of *s*, for in that case the word '–*s*' would be useless inasmuch as the meaning could be properly expresed by '–occurrent$_1$ [resident in *h*] to the locus of that which is qualified by occurrent$_1$ to that which is other than locus of *s*' alone.

NOTES: *Objection*. By this definition a true inference would appear false.

Example. Inference: (literally) '[It] possess(es) absence of the alternation 'pot-ness/contact of pot with ether', because [it possess(es)] ether-ness'.

Let a = pot-ness,
b = contact of pot with ether.
then $s = -(a \text{ or } b)$.

For absence of alternation, cf. II, § 36. Absence of alternation can occur only where neither alternate occurs. Thus all cases of s will be in the form of '$-a$ and $-b$'.

$-a$ never occurs in pots and always occurs in ether. Therefore, pot is never a locus of s. Ether is a locus of s so long as it is a locus of $-b$.

b, being a case of contact, is of incomplete occurrence (II, § 45); its absence occurs wherever its presence occurs, but with different limitors. $-b$ occurs in that area of ether that is not in contact with pots. Thus, s ($-a$ and $-b$) occurs in ether as limited to that area.

$-s = a$ or b. An alternation resides wherever either alternate resides or both. Thus, some cases of $-s$ will be in the form of a and some cases of $-s$ will be in the form of b. All pots are loci of $-s$ in form a. That part of ether which is in contact with pots is a locus of $-s$ in form b, and those pots that are in contact with ether are loci of $-s$ in form b.

Thus we have the following terms:

s:	$-(a$ or $b)$ All cases of this are in the form of $-a$ and $-b$	$-s$:	a or b Some cases of this are in the form of a and some in the form of b	h:	ether$_1$
ls:	that area of ether which is not in contact with pots	la:	pots		
		$l'b$:	that area of ether which is in contact with pots		
		$l''b$:	pots which are in contact with ether	h:	ether

h occurs in the locus ($l'b$) of that $-s$ ($-s$ in form of b) which occurs in what is different ($l''b$) from ls. Thus a true inference appears false.

The essential difference between this example and that of the monkey and the tree is that there $-s$, being in the form of an absence, could be supposed, according to the theory we are now following, to differ as its loci differ. Here, b, which is a form of $-s$, is a positive entity and cannot be supposed so to differ. Note that the objector could have constructed a simpler $-s$ by giving s as 'absence of contact', but then the inference would be *kevalānvayi*, that is, of a sort not intended to be covered by the definition.

Mathura considers a possible solution only to reject it. Granted that b, being a positive entity, cannot be differentiated as we differentiated $-$contact with a monkey, still there is a difference in the two loci of b. Why not use the technique employed in Definition 1, Insertion 9 [cf. also II, § 41] and say that locus$_1$ to $-s$ must be described by an entity qualified by occurrent$_1$ to that which is other than ls. Only pots are loci described by a or b qualified by occurrent$_1$ to that which is

other than ether, and *h* does not occur in pots. The suggestion is rejected because it would render '*l* — *s*' in the Second Definition useless.

TEXT 92.6–8 (BI.41.1–4): iti cen na, abhāvâbhāvasyâtiriktatā-matenâital--lakṣaṇa-karaṇāt, tathā câdhikaraṇa-bhedenâbhāva-bhedāt sādhyavad-bhinne ghaṭe varttamānasya sādhyâbhāvasya pratiyogi-vyadhikaraṇasya pratiyogimati gagane 'sattvād avyāpter abhāvāt.

TRANSLATION: [Answer.] The objection should not be made, for this definition was drawn on the theory that double absences differ [from their positives] and so [may] differ as their loci differ. Thus the —*s* which occurs in pot, since pot is different from *ls*, is an absence whose locus differs from that of its counterpositive, and so is not [the same as] an absence which occurs in ether, for ether *is* a locus of the counterpositive. Hence, the definition does not fail to cover the example.

NOTES: The only way of overcoming the objection, since *b* cannot be differentiated without rendering part of the definition useless, is to refuse to admit that —*s* in this example is in the form of a positive entity like *b*. As long as —*s* remains an absence only, it can, according to the theory we are now following, be differentiated according to its loci. This of course invalidates the reason given above (90.5–6) for including '*s*' in the portion '*l* — *s*' of the definition. One could not there substitute 'substance-ness' for 'that absence', since 'substance-ness' is not now to be regarded as essentially identical with — —substance-ness'. Mathura proceeds to admit this and to give a different reason for the inclusion of '*s*'.

TEXT 92.9–14 (BI.41.4–10): Na câivaṃ sādhyâbhāvêty atra sādhya-pada--vaiyarthyam abhāvâbhāvasyâtiriktatvena dravyatvâder abhāvatvâbhāvāt sādhyavad-bhinna-vṛtti-ghaṭâbhāvâdes tu hetumaty asattvād adhikaraṇa-bhedenâbhāva-bhedād iti vācyam. Yatra pratiyogi-samānâdhikaraṇatva-pratiyogi-vyadhikaraṇatva-lakṣaṇa-viruddha-dharmâdhyāsas tatrâivâdhikaraṇa-bhedenâbhāva--bhedâbhyupagamo na tu sarvatra, tathā ca sādhyavad-bhinna-vṛtti-ghaṭâbhāvâder hetumaty api sattvād asambhava-vāraṇāya sādhya-padôpādānāt.

TRANSLATION: [Objection.] At this rate, in the portion '—*s*' [of the definition], the word '*s*' *is* useless, for substance-ness cannot be [essentially identical with] an absence since a double absence differs [from the positive]. On the other hand, that absence of pot, which occurs in what is different [e.g., a lake] from the locus [e.g., a mountain] of *s* [fire] does not occur in the locus [e.g., mountain] of *h* [smoke], since absences differ according to their loci.

[Answer.] The objection should not be made, for we do not admit that absences differ according to their loci in all cases, but only where we are forced to attribute to them the contradictory properties of occurring in the same loci as do their counterpositives and occurring in different loci from those of their counterpositives. Thus, that absence of pot which occurs in what is different [lake] from locus of *s* [fire], also occurs in the locus [mountain] of *h* [smoke]. It is in order to avoid such an impossibility that the word '*s*' must not be omitted.

NOTES: Let us omit '*s*' and let the definition read simply '*h* must not occur in the locus of that absence which occurs in what is different from *ls*'.

Apply the abbreviated definition to the valid inference '[It] possess(es) fire because [it possess(es)] smoke'. We cannot substitute '— —substance-ness' for 'that absence'. Suppose we substitute '—pot' instead.

s:	fire	—:	—pot	*h*:	smoke
ls:	mountain	*l'*—:	mountain	*lh*:	mountain
		l''—:	lake		

l' is also a locus of *s*; *l''* is different from a locus of *s*. The objector claims that the —pot that resides in *l'* is different from the —pot that resides in *l''*, and that therefore the abbreviated definition applies.

Mathura replies that the —pot in *l'* is the same as the —pot in *l''*. Not all absences, he says, differ as their loci differ, but only such an absence as is at the same time a '*pratiyogi-samānâdhikaraṇâbhāva*' (an absence occurring in the same locus as does its counterpositive, cf. II, § 45) and a '*pratiyogi-vyadhikaraṇâbhāva*' (an absence occurring in different loci from those of its counterpositive). Absence of the alternation pot-ness/contact of pot with ether is such an absence, but absence of pot is not. Thus, the abbreviated definition does not apply and the word '*s*' is necessary.

Both Jagadīśa (I, 78, line 20) and Gadādhara (p. 147, lines 26 ff) notice without approval this theory that an absence may be split when it has the above-mentioned contradictory properties.

TEXT 93.1–4 (BI.41.11–15): Yad vā ghaṭâkāśa-saṃyoga-ghaṭatvânyatarâbhāvâbhāvo 'tirikta [1]eva[1], ghaṭâkāśa-saṃyogâdīnām ananugatatayā tathātvasya vaktum aśakyatvāt. Ghaṭatva-dravyatvâdy-abhāvâbhāvas tu nâtiriktaḥ ghaṭatva-dravyatvâdīnām [2] anugatatvāt. Tathā ca dravyatvâdikam ādāyâsambhava-vāraṇāyâiva sādhya-padam iti prāhur ity āstām vistaraḥ.

VARIANTS: (1) BI. omits; (2) BI. inserts 'apy'.

TRANSLATION: Or, [some] say that only [such an absence as] — —the alternation pot-ness/contact of pot and ether is different [from the counterpositive of the first absence], for it cannot be the same, since contact of pot and ether etc. does not universally accompany it. On the other hand, — —pot-ness, — —substance-ness etc. are not different [from pot-ness and substance-ness respectively], since pot-ness, substance-ness etc. universally accompany them. And thus an impossibility will arise if one takes substance-ness [in its form of — —substance-ness for 'that absence' in the abbreviated definition]. It is to avoid this impossibility that the word '*s*' is used.

Let us not continue the discussion.

NOTES: Mathura here suggests a way to keep his original reason for the inclusion of '*s*' in the portion '*l* − *s*' of the definition and still refuse to allow the −*s* of the objector's example in 91.1–92.6 to be in the form of *b*. Instead of denying essential identity with *x* to all absences of absences of *x*, he denies it only to those that would otherwise have a double nature.

THE THIRD DEFINITION

'SĀDHYAVAT-PRATIYOGIKÂNYONYÂBHĀVÂSAMĀNÂDHIKARAṆAM'

TEXT 93.5–8 (BI.42.1–4): Sādhyavat-pratiyogikânyonyâbhāvêti: hetau sādhyavat-pratiyogikânyonyâbhāvâdhikaraṇa-[1]nirūpita[1]-vṛttitvâbhāva ity arthaḥ. Anyonyâbhāvaś ca pratiyogy-avṛttitvena viśeṣaṇīyaḥ, tena sādhyavato vyāsajya-vṛtti-dharmâvacchinna-pratiyogitākânyonyâbhāvavati hetor vṛttāv api nâsambhavaḥ.

VARIANT: (1) BI. omits.

TRANSLATION: "A mutual absence whose counterpositive is a locus of *s*": The meaning is: [when there is] an absence of occurrent$_1$ [resident] in *h* and described by a locus of a mutual absence whose counterpositive is a locus of *s*. The mutual absence must be specified as not occurring in its counterpositive, so that there will be no impossibility even though *h* occurs in the locus of a mutual absence of locus of *s* the counterpositive-ness to which absence is limited by a *vyāsajya-vṛtti* property.

NOTES: Application of Third Definition to a valid inference:

s: fire | *h*: smoke
ls: mountain | ∸*ls*: ∸mountain
l ∸ *ls*: lake

h does not occur in lake. The definition holds.

But in the following valid inference, unless we specify that the mutual absence not occur in its counterpositive, the definition will fail to apply.

s: form of this mango | *h*: taste of this mango
ls: this mango | ∸*ls*: ∸this and that mango
l ∸ *ls*: this mango

h occurs in this mango and the inference appears false. The ∸*ls* that we have chosen is limited by a *vyāsajya-vṛtti* property, both-ness, and therefore occurs in its counterpositive. Cf. § 52.

TEXT 94.1–5 (BI.42.4–9): Nanv evam api nānâdhikaraṇa-sādhyake vahnimān dhūmād ity-ādau sādhyâdhikaraṇībhūta-tat-tad-vyaktitvâvacchinna-[1]pratiyogitākânyony[1]âbhāvavati hetor vṛtter avyāptir durvārā, pratiyogy-avṛttitvam

apahāya sādhyavattvâvacchinna-pratiyogitākânyonyâbhāva-vivakṣaṇe tu pañcamena saha paunaruktyam iti cen na, vakṣyamāṇa-kevalānvayy-avyāptivad asyâpy atra doṣatvāt.

VARIANT: (1) K. omits -ânyony-; BI., -pratiyogikânyony-.

TRANSLATION: [Objection.] But then, when *s* has many loci, as in the inference '[It] possess(es) fire because [it possess(es)] smoke', the fault of nonpervasion in this definition will be incurable, for *h* occurs in the loci of mutual absences whose counetrpositivenesses are limited by this or that manifestation$_1$ to *ls* [i.e., whose counterpositives *are* this or that manifestation of *ls*]. On the other hand, if you give up [the specification of the mutual absence, viz.] 'not occurring in its counterpositive', [and try to cure the fault by] taking the definition to mean a mutual absence the counterpositive$_1$ to which is limited by locus$_1$ to *s*, then this definition would be tautologous with the Fifth.

[Answer.] One should not make such an objection [against our author], for [he would admit that] there is a fault here just as he is about to admit that there is the fault of nonpervasion when the definition is applied in *kevalānvayi* inferences.

NOTES: The definition fails to apply in a valid inference:

s:	fire			*h*:	smoke
ls:	mountain	$\dot{-}$*ls*:	$\dot{-}$mountain		
		l $\dot{-}$ *ls*:	hearth		

h occurs in hearth. The definition does not hold. This fault is the cause of Raghunātha's throwing out the definition (*Ragh.*, 6–7).

Now, if the c_1 to the mutual absence be limited by locus$_1$ to *s*, the absence will not be $\dot{-}$mountain, for it must deny all loci of *s*. It will be such a mutual absence as can reside only in what is never a locus of fire, e.g., a lake. However, Mathura here claims that this cure cannot be accepted, for it will make Definition 3 the same as Definition 5, for the Fifth Definition says *h* must not occur in what is other than *ls* and it is there necessary to limit the c_1 to *ls* by locus$_1$ to *s*. Later on (94.10–95.2), Mathura tries to find some way in which, even with this cure, Definition 3 will still be different from Definition 5.

Mathura faithfully points out that the incurable fault is on the part of the definition, not the author, for when Gaṅgeśa says all five definitions fail to apply in *kevalānvayi* inferences, his statement is to be taken as an '*upalakṣaṇa*', an indication of other faults as well (cf. 101.18–102.7 below).

TEXT 94.5–9 (BI.42.9–43.5): Na ca tathâpi sādhyavat-pratiyogikânyonyâbhāva-mātrasyâiva etal-lakṣaṇa-ghaṭakatve vakṣyamāṇa-kevalānvayy-avyāptir atrâsaṅgatā, kevalânvayi-sādhyake 'pi sādhyâdhikaraṇībhūta-tat-tad-vyaktitvâvacchinna-[1]pratiyogitāk[1]-ânyonyâbhāvasya prasiddhatvād iti vācyam. [2]Tathâpi[2]

tādṛśânyonyâbhāvasya prasiddhatve 'pi tadvati hetor vṛtter evâvyāpter durvā-ratvāt.

VARIANTS: (1) BI. omits; (2) BI., atrâpi.

TRANSLATION: [Objection.] At this rate, if the definition is to contain a mutual absence of which it is merely stated that the counterpositive is *ls*, it would be incoherent of the author to mention later the fault of nonpervasion in cases of *kevalānvayi* inferences, [for this definition would not lead to such a fault]. Even though *s* is universal-positive, one will be able to find mutual absences such that their counterpositive-nesses are limited by this or that manifestation$_1$ of *ls*.

[Answer.] The objection should not be raised, for although such mutual absences could be found, *h* would occur in loci of them, [thus making all such inferences appear false]. For this reason the nonpervasion is incurable.

NOTES: Heretofore the difficulty in applying any definition of the *V.P.R.* to *kevalānvayi* inferences has been that $-s$ was unexampled. But in the Third Definition, if *ls* is not limited by locus$_1$ to *s*, the mutual absence will be exampled. Thus:

s:	nameable-ness (*abhidheyatva*)	$\dot{-}ls$:	$\dot{-}$pot	*h*:	knowable-ness (*prameyatva*)
ls:	pot	$l\ \dot{-}\ ls$:	cloth		

It is true that the mutual absence is exampled, for loci of it can be found, but *h* occurs in all such loci, so the inference still appears false and the definition still suffers from nonpervasion.

TEXT 94.10–95.2 (BI.43.6–11): Yad vā sādhyavat-pratiyogikânyonyâbhāva--padena sādhyavattvâvacchinna-pratiyogitākânyonyâbhāva eva vivakṣitaḥ. Na câivam pañcamâbhedaḥ, tatra sādhyavattvâcchinna-[1]pratiyogitāk[1]-ânyonyâ-bhāvavattvena praveśaḥ, atra tu tādṛśânyonyâbhāvâdhikaraṇatvenêty adhi-karaṇatva-praveśâpraveśābhyām eva bhedāt. Akhaṇḍâbhāva-ghaṭakatayā ca nâdhikaraṇatvâṃśasya vaiyarthyam iti na ko 'pi doṣa iti dik.

VARIANT: (1) BI., -pratiyogik-.

TRANSLATION: Or one may say there is no fault in the definition, for by the expression 'a mutual absence whose counterpositive is *ls*' the author *does* mean a mutual absence to which the counterpositive$_1$ is limited by locus$_1$ to *s*. And this is not undifferent from the Fifth Definition, for the entity is there introduced as 'that *which possesses* a mutual absence to which the counterpositive$_1$ is limited by *s*-possessing-ness' whereas it is introduced here as 'that *which is a locus* of such a mutual absence', and so there is a difference depending on whether or not it is introduced as a locus. The portion 'which is a locus' is not useless, for it goes to make up an indivisible absence.

This much as a general indication.

NOTES: This is sophistry. No distinction has heretofore been made between

'. . . *vat*' (possessing . . .) and '. . . *adhikaraṇa*' (locus of . . .). 'Possessing x' and 'locus of x' are equal. Whether or not they are essentially identical is surely immaterial, for if they are equal this alone would destroy the commentators' doctrine that each successive definition is offered to overcome a new difficulty.

FOURTH DEFINITION

'SAKALA-SĀDHYÂBHĀVAVAN-NIṢṬHÂBHĀVA-PRATIYOGITVAM'

TEXT 95.3–8 (BI.43.12–17): Sakalêti: sākalyaṃ sādhyâbhāvavato viśeṣaṇam, tathā ca yāvanti sādhyâbhāvâdhikaraṇāni tan-niṣṭhâbhāva-pratiyogitvaṃ [1]hetor[1] vyāptir ity arthaḥ. Dhūmâdy[2]-abhāvavad-jalahradâdi-niṣṭhâbhāva-pratiyogitvād vahny-ādāv ativyāptir iti yāvad iti sādhyâbhāvavato viśeṣaṇam. Sādhyâbhāva--viśeṣaṇatve tat-tad-[3]hradâvṛttitvâdi[3]-rūpeṇa yo vahny-ādy-abhāvas [4]tasyâpi[4] [5]sakala-sādhyâbhāvatvena[5] praveśāt tāvad-adhikaraṇâprasiddhyâsambhavâpatteḥ.

VARIANTS: (1) BI., hetau; (2) K. omits 'ādy'; (3) K., -hradâvṛttitvena-; (4) K., tasyapi; (5) BI., sakala-madhye.

TRANSLATION: "All": all-ness qualifies $l-s$. Thus the meaning is: pervasion is where h is a counterpositive of an absence residing in as many loci of $-s$ as there are. The expression 'as many as there are' qualifies $l-s$, for otherwise the definition would be so wide as to apply in false inferences, for fire etc. is the counterpositive of an absence residing in lake etc. which is a locus of $-$smoke etc. Furthermore, if it were to qualify $-s$, the definition would become impossible, for [in the valid inference 'It possess(es) fire because it possess(es) smoke'], if we take [specific] absences of fire that are in the form of $-$occurrent$_1$ to this lake, $-$occurrent$_1$ to that lake etc., which absences are included in 'all absences of s', there can be found no locus of [the product of] these.

NOTES: When we say 'all $l-s$', $l-s$ may be said to be qualified by all-ness or by the expression 'all'. Cf. II, § 17.

There can be no locus of the product of specific absences. Cf. II, § 38.

Jagadīśa (I, 79, line 14) says that if 'all' is taken with '$-s$' the definition would suffer from nonpervasion, not impossibility. BI., p. 43–44, Ṭippanī gives the reason. There would be just one sort of valid inference where the definition would apply. If s were an absence to which the c_1 was limited by temporal relation, the relation limiting locus$_1$ to $-s$ would be temporal, and by this relation all the specific absences of s could be connected with one locus.

TEXT 96.1–3 (BI.43.17–44.3): Na ca dravyaṃ sattvād ity-ādau dravyatvâbhāvavati guṇâdau sattvâder viśiṣṭâbhāvâdi-sattvād ativyāptir iti vācyam, tādṛśâbhāva-pratiyogitâvacchedaka-hetutâvacchedakavattvasyêha vivakṣitatvāt.

TRANSLATION: [Objection.] The definition will be so wide as to apply where [there is a false inference] such as '[It] (is) a substance because [it possess(es)]

reality', for there are qualified absences of reality in quality etc. and quality is a locus of −substance-ness.

[Answer.] This objection should not be made, for one must take the definition to mean: having gh_1 limit the c_1 to the said absence.

NOTES: Example of overpervasion of the definition: False inference:

s:	substance$_1$	$-s$:	−substance$_1$	h:	reality
		all $l - s$:	quality		
			action		
			etc.		

As pointed out in II, § 41, reality and qualified reality are essentially identical. Thus, for h we may substitute 'reality qualified by otherness than quality or action' (*guṇa-karmânyatva-viśiṣṭa-sattā*). This does not occur in quality. Accordingly, h forms the counterpositive of an absence residing in quality etc. and the inference appears valid.

We have met the above inference before (65.2–4), but there it was not liable to appear true (cf. II, § 41, note 138). We have also met elsewhere the confusion of unit and qualified unit (59.3–61.2, 67.1–4). Heretofore the substitution has been of unit for qualified unit, and two rather complicated methods of guarding against such confusion have been mentioned (cf. 59.1–3 and 67.1–4). Here the substitution takes place in the opposite direction, viz., substituting qualified unit for unit, and the remedy is simpler. We have only to require that the absence of h resident in all $l - s$ be an absence that denies as much as h affirms. More technically,

Insertion 1. In the Fourth Definition, for 'counterpositive of an absence', understand 'counterpositive of an absence the c_1 to which is limited by gh_1'.

This insertion corresponds to Insertion 1 of Definition 1 (24.1–3).

TEXT 96.3–5 (BI.44.3–5): Pratiyogitā ca hetutâvacchedaka-sambandhâvacchinnā grahyā. Tena dravyatvâbhāvavati guṇâdau sattâdeḥ saṃyoga-[1]sambandhâvacchinnâbhāva-sattve 'pi nâtivyāptiḥ.

VARIANT: (1) BI. inserts 'ādi'.

TRANSLATION: And the counterpositive$_1$ must be taken as limited by Rh_1. Thus the definition will not be so wide as to apply [where there is a false inference such as 'It (is) a substance because it possess(es) reality,] even though in quality etc. which are loci of −substance-ness there is an absence of reality [to which the counterpositive$_1$ is] limited by a relation of contact.

NOTES: See example in notes to 96.1–3. '−Reality by contact' occurs in quality, for reality, being a generic character, can only inhere. Hence,

Insertion 2. The $c_1 \llcorner -h \lrcorner$ must also be limited by Rh_1. This corresponds to Insertion 2 of Definition 1 (27.1–3).

Note that the symbol '$-h$' may refer either to a constant or to a mutual

absence, being in this respect like the symbol '$-s$' (cf. 29.1–4). When h_1 is limited by essential identity, '$-h$' will refer to a mutual absence; otherwise it will refer to a constant absence.

TEXT 96.5–9 (BI.44.5–9): Sādhyâbhāvaś ca [1]sādhyatâvacchedaka-sambandhâvacchinna[1]-[2]sādhyatâvacchedakâvacchinna[2]-pratiyogitāko [3]grāhyaḥ[3], anyathā parvatâdāv api vahny-āder viśiṣṭâbhāvâdi-sattvena samavāyâdi-sambandhâvacchinna-vahny-[4]abhāvâdi[4]-sattvena ca yāvad-antargatatayā tan-niṣṭhâbhāva-pratiyogitvâbhāvād dhūmasyâsambhavaḥ syāt.

VARIANTS: (1), (2) BI. reverses; (3) BI., bodhyaḥ; (4) BI., -ādi-sāmānyâbhāva-.

TRANSLATION: [In this definition,] $-s$ must be understood to be an absence the c_1 to which is limited by Rs_1 and gs_1. Otherwise there would be an impossibility, for [in the valid inference 'It possess(es) fire because it possess(es) smoke',] even on a mountain etc. there are specific absences of fire, and [generic] absences of fire limited by relations of inherence etc., and mountain [as a locus of these absences] is included in [the specification] 'as many [loci] as there are'; yet [the h] smoke is not a counterpositive of an absence resident in mountain.

NOTES: *Insertions 3 and 4.* c_1 ⌞$-s$⌟ must be limited by gs_1 and Rs_1.

This is the same as Insertions 3 and 4 of Definition 1 (29.1–4).

TEXT 96.10–97.3 (BI.44.9–45.3): Na ca kapi-saṃyogy etad-vṛkṣatvād ity ādau etad-vṛkṣasyâpi tādṛśa-sādhyâbhāvavattvena yāvad-antargatatayā tan-niṣṭhâbhāva-pratiyogitvâbhāvād etad-vṛkṣatvasyâvyāptir iti vācyam, kiñcid-anavacchinnāyāḥ sādhyâbhāvâdhikaraṇatāyā iha vivakṣitatvāt. Itthaṃ ca kiñcid-anavacchinnāyāḥ kapi-saṃyogâbhāvâdhikaraṇatāyā guṇâdāv eva sattvāt tatra ca hetor apy abhāva-sattvān nâvypāptiḥ.

TRANSLATION: [Objection.] The definition is so narrow as not to apply where [there is a valid inference] such as '[It] possess(es) contact with a monkey, because it (is) this tree'. Here this tree is also a locus of $-s$ and as such must be included in the term 'as many [loci] as there are', yet this-tree-ness is not a counterpositive of an absence resident in this tree.

[Answer.] The objection should not be made, for we must understand the definition to require an unlimited locus_1 to $-s$. Under such an interpretation the definition will not be too narrow, for only in quality etc. can there be locus_1 unlimited by anything to absence of contact with monkey, and in quality etc. there is an absence of h.

NOTES: *Insertion 5.* There must reside in $l-s$ an unlimited locus_1 to $-s$. This corresponds exactly to Objection 12 and Insertion 9 in the First Definition. Cf. notes to 59.3–61.2.

TEXT 97.3–6 (BI.45.3–6): Na ca kapi-saṃyogâbhāvavān sattvād ity-ādau sādhyâbhāvasya kapi-saṃyogâder nirvacchinnâdhikaraṇatvâprasiddhyâvyāptir

iti vācyam, kevalânvayiny abhāvād ity anena grantha-kṛtâivâsya[1] doṣasya vakṣyamāṇatvāt.

VARIANT: (1) BI. omits 'asya'.

TRANSLATION: [Objection. At this rate] the definition will not apply where [there is a valid inference] such as '[It] possess(es) absence of contact with a monkey because it (is) real' etc., for no unlimited locus$_1$ to $-s$ can be found, since $-s$ is contact with a monkey etc.

[Answer.] One should not make this objection, for the author himself will admit this fault in the definition by the words "because it is not any of these where s is universal-positive."

NOTES: This is a repetition of Objection 14 and Answer of the First Definition (61.2–4).

TEXT 97.6–11 (BI.45.6–11): Na ca pṛthivī kapi-saṃyogād ity-ādau pṛthivī-tvâbhāvavati jalâdau yāvaty eva kapi-saṃyogâbhāva-sattvād ativyāptir iti vācyam, tan-niṣṭha-padena tatra niravacchinna-vṛttimattvasya vivakṣitatvāt. Itthaṃ ca pṛthivītvâbhāvâdhikaraṇe jalâdau yāvad-antargate niravacchinna--vṛttimān abhāvo na kapi-saṃyogâbhāvaḥ kintu ghaṭatvâdy-abhāva eva, tat--pratiyogitvasya hetāv asattvān nâtivyāptiḥ.

TRANSLATION: [Objection.] The definition will be so wide as to apply where [there is a false inference] such as '[It] (is) earth because [it possess(es)] contact with a monkey', for water is a locus of $-$earth-ness, and [as such] is [included] in 'as many [loci] as there are', and there *is* an absence of contact with a monkey in water.

[Answer.] The objection should not be raised, for [when the definition says that h must be the counterpositive of an absence resident in $l-s$], by the word 'resident in' is meant 'possessing unlimited occurrence in'. Now, in water, which is a locus of $-$earth-ness and [as such] is included in 'as many [loci] as there are', the absence of contact with a monkey is not an absence possessing unlimited occurrence; such an absence can only be one like absence of pot-ness, and since the h *is not* a counterpositive of this absence, the definition is not too wide.

NOTES: *Example* of overpervasion of the definition. False inference:

s: earth$_1$	$-s$: $-$earth$_1$	$-h$: $-$contact with a monkey	h: contact with a monkey

all $l-s$:	water etc. etc.	(a) $-$contact with a monkey (b) $-$pot$_1$ etc.	abscences residing in $l-s$

Contact with a monkey and its absence both occur in water, h *is* the c of absence a, hence the inference appears valid. The fault is cured by

Insertion 6. In the definition, for 'an absence residing in' understand 'an absence of unlimited occurrence residing in' (cf. II, § 45).

This insertion rules out absence *a* in the example above and forces us to take an absence such as *b*.

Note that no such insertion as this is necessary in the First Definition. The First Definition *forbids h* to occur in *l* – *s*. In the inference above it does occur, so the inference would be shown false. But the Fourth Definition *requires* –*h* to occur in *l* – *s*; hence the necessity of the insertion.

TEXT 97.11–16 (BI.45.11–17): Na câivam anonyâbhāvasya vyāpya-vṛttitā-niyama-naye dravyatvâbhāvavān saṃyogavad-bhinnatvād ity-āder api sad-dhetutayā tatrâvyāptiḥ saṃyogavad-bhinnatvâbhāvasya saṃyoga-rūpasya nirāvacchinna-vṛtter aprasiddher iti vācyam, anyonyâbhāvasya vyāpya-vṛttitā-niyama-naye [1'vyāpya-vṛttimad-1] anyonyâbhāvasyâbhavo na pratiyogitâvacchedaka-svarūpaḥ kintv atirikto vyāpya-vṛttir, anyathā mūlâvacchedena kapi-saṃyogi-bhedâbhāva-bhānânupapatter iti saṃyogavad-bhinnatvâbhāvasya[2] niravacchinna-vṛttimattvāt.

VARIANT: (1) Supplied from 61.5–10, as being necessary to avoid contradiction; not found in either K. or BI.; (2) BI. inserts 'api'.

TRANSLATION: [Objection.] The definition will still be too narrow, for inferences such as '[It] possess(es) absence of substance-ness because [it possess(es)] difference from locus of contact' are valid according to the opinion of those who claim that a mutual absence is of complete occurrence, yet the definition will not apply here, for – ∸locus of contact is essentially identical with contact and an unlimited occurrence of this is unexampled.

[Answer.] The above objection should not be made, for the opinion of those who claim that a mutual absence is of complete occurrence is that an absence of a mutual absence of that which is a locus of an entity of incomplete occurrence is not essentially identical with the limitor of the counterpositive$_1$ [to the mutual absence] but falls outside its scope and is of complete occurrence, since otherwise one would not have a knowledge of – ∸locus of contact with a monkey with regard to the roots of a tree. Hence, following this opinion, – ∸locus of contact *does* have unlimited occurrence.

NOTES: The argument here is exactly that of 61.5–10, but the problem arises with regard to –*h* rather than –*s*.

"– ∸locus of contact": *bhinnatvâbhāva* = *bhedâbhava* = *anyonyâbhāvâbhāva*. Cf. II, § 27.

"One would not have a knowledge of": (*bhānânupapattir*): *N.K.*, *s. v.* bhānam glosses '*bhāna*' with '*viṣayatāvat*'. *B.N.*, p. 20, n. 2 gives the following as synonymous: '*bhāna*', '*bhāsana*', '*viṣayi-karaṇa*'.

TEXT 97.17–22 (BI.45.17–22): Vastutas to sakala-padam atrâśeṣa-paraṃ na tv aneka-param, etad-ghaṭatvâbhāvavān paṭatvād ity-[1]ady[1]-eka-vyakti-vipakṣe

sādhyâbhāvâdhikaraṇasya yāvattvâprasiddhyâvyāpty-āpatteḥ. Tathā ca kiñcid--anavacchinnāyā nirukta-sādhyâbhāvâdhikaraṇatāyā vyāpakībhūto yo 'bhāvaḥ hetutâvacchedaka-sambandhâvacchinna-tat-pratiyogitâvacchedaka-hetutâvacchedakavattvaṃ lakṣaṇârthaḥ.

VARIANT: (1) K. omits.

TRANSLATION: But as a matter of fact, the word 'all' here means without remainder rather than many. Otherwise the definition would be so narrow as not to apply where the anti-*pakṣa* [$l - s$] is a single individual as in [the inference] '[It] posess(es) —this-potness, because it (is) a cloth' etc., for here one cannot find any all-ness [as-many-as-there-are-ness] of $l - s$. Thus, the meaning of the definition is: 'pervasion is where an entity [viz., h] has gh_1 and Rh_1 limit the counterpositive$_1$ to that absence which is a pervader of unlimited locus$_1$ to the said $-s$'.

NOTES: The construction of the last sentence is difficult. The correlatives are *yo 'bhāvah* and *tat-pratiyogitā*; thus, literally: 'having gh_1 [be] the limitor of c_1 (c_1 [also] limited by Rh_1) to *that* absence *which* is a pervader etc.'.

From this point on to the end of his comment on the Fourth Definition, Mathura deals with what he calls the *real* meaning (*paramârtha*) of the definition. By 'real meaning' he seems to indicate that this interpretation fits the actual facts of all non-*kevalānvayi* inferences and is not subject to the incurable faults of the Fourth Definition taken literally. What these faults are appears more clearly from other commentators than from Mathura.

The basic distinction between the Fourth Definition and all the others of the *V.P.R.*, as was indicated above, is that it *requires* the occurrence of an entity (viz., $-h$) whereas all the others *forbid* the occurrence of an entity (viz. h). This in conjunction with a certain Nyāya theory of double absences renders the Fourth Definition liable to a peculiar fault.

The theory of double absences that now demands our attention is that $- -$generic fire may be in the form of a specific fire. This can be shown as follows:

Suppose x is a class consisting of a and b

	x	
a	b	not x

Then, a member of not not x will be a member of a or a member of b.

The Naiyāyika would say:

'[sometimes] $- -x \doteq a$ and [sometimes] $- -x \doteq b$' (Cf. II, § 42).

Keeping the last statement in mind, let us test the Fourth Definition, as literally interpreted, on the following valid inference: '[It] possess(es) absence of smoke because [it possess(es)] absence of fire' (*dhumâbhāvavān vahny-abhāvāt*)

s:	$-$smoke	$-s$:	hearth smoke	h:	mountain fire	h:	$-$fire
		:	mountain smoke	:	hearth fire		
		:	etc.	:	etc.		
		all $l - s$:	hearth, mountain, etc.				

No one form of $-h$ occurs in all loci of $-s$, so the inference appears false.

One way of curing this fault is to understand the definition to mean that 'h must be the c of an absence which possesses a property which never limits the c_1 to a constant absence occuring in a locus of $-s$'. [Notice that hereby one is no longer directly *requiring* an occurrence of $-h$.] In the above inference mountain fire possesses the properties mountain-ness and fire-ness and fire-ness never limits the c_1 to an absence occurring in a locus of smoke, that is, one can never say there is no fire in a locus of smoke.

Now this phrase 'the possessing a property which never limits the c_1 to a constant absence occurring in locus of x' (*tad-adhikaraṇa-niṣṭhâtyantâbhāva--pratiyogitânavacchedaka-dharmavattva*) is itself a definition of a 'pervader' (*vyāpaka*; cf. Śiv. Miśra 98.2–3 and *N.K.*, *s. v.* vyāpakatvam). In the definition 'x' (*tad*) stands for the pervaded. Thus Mathura says that in the Fourth Definition $-h$ must be a pervader of the locus$_1$ to $-s$. [The loci of locus$_1$ to $-s$ are the loci of $-$s.]

This phrase '$-h$ must be a pervader of the locus$_1$ to $-s$' has another advantage. We hereby avoid the ambiguous word 'all'. Gadādhara points out (p. 154) that there are two forms of all-ness, 'non-remainder-ness with plurality' (*anekâśeṣatva*) and 'simple non-reminder-ness' (*aśeṣatva-mātra*). In valid inferences where $l - s$ is a single individual, if one takes all-ness of $l - s$ in the first form, there will be an unexampled term. Accordingly, Mathura says that in the Fourth Definition all-ness is to be taken in the second form. But even this he finds unpalatable.

It was pointed out in II, §§ 22 and 32 that the Naiyāyikas seldom quantify their knowledges and statements; they prefer the union of two negatives. The only reason 'all' has been used in the Fourth Definition is simplicity, for what we are requiring to occur in all $l - s$ is already a negative. To universalize by the use of two negatives would require that the Fourth Definition contain altogether four negatives, e.g., $-h$ must not not occur in $l - s$. Now, despite the advantages of simplicity, when Mathura gives the real meaning of the definition, this is essentially what he does. If $-h$ is a pervader of locus$_1$ to $-s$, this means, according to

the definition of pervader given above, that '*absence* of *h* have a property that does *not* limit the c_1 to an *absence* residing in a locus of locus_1 to *absence* of *s*'.

The real meaning avoids the difficulty arising from the peculiar conception of double absences and avoids the unpalatable word 'all', but even when refined still further (98.4–6 below) it cannot be taken as a direct interpretation of the Fourth Definition. The reason is that to do so would involve a *petitio principii.* One would be using the word 'pervader' in a definition of pervasion. The definition of pervader given above is essentially a rearrangement of part of the *siddhānta-lakṣaṇa* or definitive definition of *vyāpti* (cf. notes following 61.2–4). This is why Raghunātha throws out the Fourth Definition without trying to avoid the two difficulties above mentioned and this is apparently why Mathura refers to this interpretation as one that fits the facts rather than the words of the definition.

TEXT 97.22–23 (BI.45.22–46.2): Na ca sattâdi-sāmānyâbhāvasyâpi prameyatvâdinā nirukta-sādhyâbhāv-[1]âdhikaraṇatāyā vyāpakatvād[1] dravyaṃ sattvād ity-ādāv ativyāptiḥ.

VARIANT: (1) BI., -adhikaraṇatā-vyāpakatvād.

TRANSLATION: [Objection. If you say "an absence which is a pervader etc.",] your definition will be so wide as to apply where [there is a false inference] such as '[It] (is) a substance because [it possess(es)] reality', since the generic absence of reality, by [its possessing] the property common to all objects of knowledge, pervades the locus_1 to $-s$.

NOTES: *Example* of overpervasion of the real meaning of the Fourth Definition. False inference:

s: substance_1 $-s$: $-\text{substance}_1$ $-h$: $-\text{reality}$ h: reality

↓

l_1 to $-s$

↘ all $l-s$: quality ← $-\text{substance}_1$ } absences residing in $l-s$

etc. ← etc.

$-$reality, quality, action etc. are all objects of knowledge; they all possess the property object-of-knowledge-ness. One cannot say that $-$object of knowledge ever resides in a locus of $-s$. Accordingly, $-h$ possesses a property that never limits the c_1 to an absence that resides in a locus of locus_1 to $-s$. In other words, $-h$ pervades locus_1 to $-s$, so the false inference appears valid.

TEXT 97.23–98.4 (BI.46.2–6): Tadvan-niṣṭhânyonyâbhāva-pratiyogitânavacchedakatvaṃ vyāpakatvam ity uktau tu nirdhūmatvavān nirvahnitvād ity-ādāv avyāptiḥ nirvahnitvâbhāvānāṃ vahni-vyaktīnāṃ sarvāsām eva [1]cālanīya[1]-nyāyena nirdhūmatvâbhāvâdhikaraṇatāvan-niṣṭhânyonyâbhāva-pratiyogitâvacchedakatvād iti vācyam,

VARIANT: (1) BI., cālanī.

TRANSLATION: [Objection continued.] Furthermore, if you [change the definition of pervader to avoid this fault and] say that an entity pervades another when it is not the limitor of counterpositive$_1$ to a mutual absence residing in a locus of that other, then your definition will be so narrow as not to apply where [there is a valid inference] such as '[It] possess(es) —smoke because [it possess(es)] —fire', for absences of —fire, since these are [in the form of] all the individual manifestations of fire, are, by sifting, limitors of counterpositivenesses to mutual absences resident in loci of locus$_1$ to — —smoke.

NOTES: The objector produces a red herring in the shape of a second definition of pervader that will cure the fault pointed out in 97.22–23. He then shows that the new definition leads to a new fault.

The second definition is: 'the pervader of x is not the limitor of a c_1 to a *mutual* absence resident in a locus of x' (*tadvan-niṣṭhânyonyâbhāva-pratiyogitânavacchedakatvaṃ vyāpakatvam*). Thus fire is the pervader of smoke:

fire smoke
∸fish and algae locus ⟶ smoke locus

One cannot say 'a locus of smoke is different from a locus of fire'; what one can say is 'a locus of smoke (since this must be mountain, hearth etc.) is different from a locus of fish and algae (since this must be river, lake etc.)'. Now fire limits the c_1 resident in locus of fire and described by ∸locus of fire (cf. II, §28). It also limits the c_1 resident in locus of smoke, for every locus of smoke is a locus of fire. But fire does not limit the c_1 resident in locus of fish and algae.

Using this definition of pervader, the inference given in the notes to 97.22–23 is shown to be false, for

—reality locus$_1$ to —s
∸locus of —reality ⟶ locus of —s

locus of —s is different from locus of —reality, since the former may be quality or action while the latter cannot be these but must be the last four categories. Accordingly, —h (—reality) does limit the c_1 to a mutual absence resident in locus of locus$_1$ to —s. In other words, —h does not pervade locus$_1$ to —s.

So far so good. But the second deniton of pervader raises a new difficulty. In the inference '[It] possess(es) absence of smoke because [it possess(es)] absence of fire': [note '*nirdhūmatva*' = '*dhūmâbhāva*']

s: $-$smoke $-s$: $- -$smoke $-h$: $- -$fire h: $-$fire

∸ specific smoke ∸ specific fire

↓ ∸ (*a*) mountain smoke ∸ (*α*) hearth fire

(*b*) hearth smoke (*β*) mountain fire

etc. etc.

l_1 to $-s$

↘

$l - s$: l of mountain smoke ← ∸ l of hearth fire } mutual absences residing in $l - s$.

l of hearth smoke ← ∸ l of mountain fire

$-h$ in form α is a limitor of the c_1 to ∸locus of hearth fire and this absence resides in a locus (viz., locus of mountain smoke) of locus$_1$ to $-s$; $-h$ in form β is a limitor of the c_1 to ∸locus of mountain fire and this absence resides in a locus (viz., locus of hearth smoke) of locus$_1$ to $-s$; and so on. This process is called sifting; cf. II, § 32. Thus, $-h$ does *not* pervade locus$_1$ to $-s$ and a valid inference appears false.

TEXT 98.4–6 (BI.46.6–8): tādṛśâdhikaraṇatā[1]yā[1] vyāpakatâvacchedakaṃ hetutâvacchedaka-sambandhâvacchinna-yad-dharmâvacchinnâbhāvatvaṃ tad-dharmavattvasya vivakṣitatvāt.

VARIANT: (1) BI. omits.

TRANSLATION: [Answer.] The objection should not be raised, for what is meant is that [pervasion is] where an entity [viz., h] possesses that property limited by which and by Rh_1 there is an absence-ness [in $-h$] that is the limitor of pervader$_1$ to the said locus$_1$.

NOTES: This is to be substituted in the last sentence of 97.17–22 for *tathā ca . . . hetutâvacchedakavattvam.*

Mathura overlooks the second definition of pervader and returns to the first. An examination of the inference where this definition failed (97.22–23) shows clearly enough what was wrong: $-$reality pervaded locus$_1$ to $-$substance-ness not by its ($-$reality's) nature of being $-$reality but by its nature of being an object of knowledge. The present refinement of the definition restricts this nature of $-h$, for the nature or property in virtue of possessing which x pervades y is the limitor of the pervader-ness (*vyāpakatâvacchedaka*) in x to y. This can be shown more clearly by the following.

By the first definition of pervader, x is a pervader of y when x is a possessor of a special property (viz., that property which never limits c_1 to a constant absence resident in locus of y). Now, the qualifier of all possessors of a given property is equally possessor-ness of that property (*tad-dharmavattva*) or that property itself (*tad-dharma*); cf. II, § 28. Furthermore, relational abstracts like s_1, pervader$_1$, etc. are limited by the qualifiers of the *sādhyas*, pervaders, etc. in which they reside (II, § 22). Accordingly, the limitor of pervader-ness to y resident in x will be the special property (viz., the property which never limits c_1

etc.) resident in x. This special property is what we referred to in the last paragraph as the nature of the pervader in virtue of possessing which it pervades.

The present restriction says that the limitor of pervader$_1$ to locus$_1$ to $-s$ must be an absence$_1$ limited by Rh_1 and by a property x that h must possess. Returning to the inference where our difficulty occurred:

s: substance$_1$ $-s$: $-$substance$_1$ $-h$: $-$reality h: reality

l_1 to $-s$ ↓

↘ $l-s$:

: quality ← ← $-$substance$_1$ | absences
action ← ← $-$quality$_1$ | residing
etc. ← — $-$ $-$reality | in $l-s$
(≐ reality)

$-h$ here possesses at least two properties: a, object-of-knowledge-ness, and b, absence$_1$ limited by reality and by Rh_1. For the inference to be valid $-h$ is required not simply to be a pervader of locus$_1$ to $-s$, but to be a pervader in virtue of possessing (literally, to have its pervader$_1$ limited by) absence$_1$ limited by Rh_1 and by a property possessed by h. Now, a is not an absence$_1$ limited by Rh_1 and by a property possessed by h. b is, but b does not limit pervader$_1$ to locus$_1$ to $-s$, since b does limit the c_1 to an absence (viz., $-$ $-$reality) residing in loci of locus$_1$ to $-s$. Accordingly, the inference is shown to be false.

Notice that the relation between h and the limitor of the special property is left the loose one expressed by 'h possesses the property'. Yet if we choose a property z that is related to more or less the h, z will not limit the absence$_1$ in absence of h, for the limitors of an absence are the limitors of its c_1 (cf. II, § 30).

TEXT 98.6–12 (BI.46.8–14): Vyāpakatâvacchedakatvaṃ tu tadvan-niṣṭhâtyantâbhāva-pratiyogitânavacchedakatvaṃ na tu tadvan-niṣṭha-pratiyogi-vyadhikaraṇâbhāva-pratiyogitânavacchedakatvaṃ tadvati niravacchinna-vṛttimān yo 'bhāvas tat-pratiyogitânavacchedakatvaṃ vā, prakṛte vyāpakatāyām pratiyogi-vaiyadhikaraṇyasya [1]niravacchinna-vṛttitvasya[1] vā praveśe prayojana-virahāt. Tena pṛthivī kapi-saṃyogād ity-ādau nâtivyāptiḥ, kapi-saṃyogâbhāvatvasya nirukta-vyāpakatâvacchedakatva-virahād ity eva paramârthaḥ.

VARIANT: (1) niravacchinnatvasya.

TRANSLATION: The limitor of the pervader$_1$ [i.e., the property by virtue of possessing which x pervades y] is 'a property which does not limit the counterpositive$_1$ to a constant absence residing in locus of y' rather than 'a property which does not limit the counterpositive$_1$ to an absence which has different loci from its [the absence's] counterpositive and which resides in a locus of y' or 'a property which does not limit the counterpositive$_1$ to an absence of unlimited occurrence in locus of y', for when pervader$_1$ is the subject of discussion it becomes useless to introduce 'difference of locus from its counterpositve' or 'un-

limited occurrence'. Thus the definition would not be so wide as to apply where [there is a false inference] such as '[It] (is) earth because [it possess(es)] contact with a monkey', for absence-ness of contact with a monkey would not be a property limiting the said pervader$_1$.

The preceding is the real meaning.

NOTES: When Mathura gave the literal meaning of the Fourth Definition, Insertion 6 was necessary (97.6–11). This required that $-h$ be an absence of unlimited occurrence. Now that he gives the real meaning, making use of the concept pervader, no such insertion is necessary.

In the inference '[It] possess(es) earthness because [it possess(es)] contact with a monkey':

s: earth$_1$ — $-s$: $-$earth$_1$ — $-h$: $-$contact with a monkey — h: contact with a monkey

l_1 to $-s$ ↓ ↘ $l-s$: water ⟵ (a) $-$contact with a monkey; : etc. ⟵ (b) $--$contact with a monkey } absences residing in $l-s$

The limitor (viz., $-$contact-ness with a monkey) of the pervader$_1$ in $-h$ limits the c_1 to absence b which absence resides in a locus of locus$_1$ to $-s$. Accordingly, $-h$ *does not* pervade locus$_1$ to $-s$ and the inference is shown to be false.

The real reason why Insertion 6 can now be dropped is this: Insertion 6 was necessary only because we were *requiring* an entity ($-h$) to reside in all of another ($l-s$). But now we are universalizing by two negatives. We are forbidding an entity ($-h$) to be limited by a property which limits what does not reside in $-s$.

THE FIFTH DEFINITION

'SĀDHYAVAD-ANYÂVṚTTITVAM'

TEXT 100.1–7 (BI.46.15–21): Sādhyavad-anyêti: atrâpi prathama-lakṣaṇôkta-rītyā hetau sādhyavad-anya-vṛttitvâbhāva ity arthaḥ. Tādṛśa-vṛttitvâbhāvaś ca tādṛśa-vṛttitva-sāmānyâbhāvo bodhyaḥ. Tena dhūmavān vahner ity-ādau dhūmavad-anya-jalahradâdi-vṛttitvâbhāvasya dhūmavad-anya-vṛttitva-jalatvôbhayâbhāvasya ca hetau sattve 'pi nâtivyāptiḥ. Sādhyavad-anyatvaṃ cânyonâbhāvatva-nirūpita-sādhyavattvâvacchinna-pratiyogitāk-[1]abhāvavattvaṃ[1], tena vahnimān dhūmād ity-ādau tat-tad-vahnimad-anyasmin dhūmâder vṛttāv api nâvyāptiḥ,

VARIANT: (1) K., -âbhāvatvaṃ.

TRANSLATION: "Other than locus of s": One is to analyze the compound as we did in the First Definition, thus: '$-$occurrent$_1$ [resident] in h and to [i.e.,

described by] that which is other than locus of *s*'. And this $-$occurrent$_1$ must be taken as a generic $-$occurrent$_1$. Thus the definition is not so wide as to apply where [there is a false inference] such as '[It] possess(es) smoke because [it possess(es)] fire', even though there is in the *h* a $-$occurrent$_1$ to a lake etc. which is other than a [specific] locus of smoke, and even though there is in *h* absence of the conjunct water-ness and occurrent$_1$ to that which is other than locus of smoke. 'That which is other than locus of *s*' means that which possesses an absence to which the counterpositive$_1$ is limted by locus$_1$ to *s* and described by mutual absence$_1$. Thus the definition is not so narrow as to fail to apply where [there is a valid inference] such as '[It] possess(es) fire because [it possess(es)] smoke', even though smoke does occur in what is other than this or that locus of fire.

NOTES: "Other than locus of *s*": literally, 'other than possessor of *s*' — and so throughout his comment on this definition Mathura uses 'possessor' (*vat*) rather than 'locus' (*adhikaraṇa*). The distinction is only worth noticing because Mathura has himself pointed it out (94.10–95.2 above). The two expressions are equivalent.

"As we did in the First Definition": The compound '*sādhyavad-anyâvṛttitvam*' is to be analyzed as a *vyadhikaraṇa-bahuvrīhi* compound followed by the abstract suffix *-tva*, just as the First Definition was taken (20.1–4).

"And this $-$occurrent$_1$ must be taken as a generic $-$occurrent$_1$": This corresponds to Insertion 1 of the First Definition (24.1–3).

"To which the counterpositive$_1$ is limited by locus$_1$ to *s*": The limitor of the counterpositive$_1$ to 'other than *x*' is always x_1. Otherwise 'other than a pot' might be said of a blue pot, since a blue pot is other than a red pot. This is pointed out by Raghunātha (*Ragh.*, 19–20). Hence this restriction, although it corresponds to Insertion 4 of the First Definition, is not really an insertion, for it is implied by the very words of this definition.

"And is described by mutual absence$_1$": the meaning is: and is described only by a mutual absence and never by a constant absence. The purpose of this restriction is shown by what follows.

TEXT 101.1–5 (BI.46.21–47.4): na vā vahnimattvâcchinna-pratiyogitākâtyantâbhāvasya svâvacchinna-bhinna-bheda-rūpasyâdhikaraṇe parvatâdau dhūmasya vṛttāv apy avyāptiḥ, tasya sādhyavattvâcchinna-pratiyogitāyā atyant[1]âbhāva[1]-nirūpitatvenânyonyâbhāvatva-nirūpitatva-virahāt. Anyonyâbhāvatva-nirūpitatvaṃ ca tādātmya-sambandhâvacchinnatvam eva.

VARIANT: (1) BI., -âbhāvatva-.

TRANSLATION: Nor is the definition too narrow [in these same inferences] even though a mountain is the locus of a constant absence whose counterpositive$_1$ is limited by locus$_1$ to fire and this constant absence is essentially identical with difference from difference from itself, and smoke occurs on a mountain. It is not

too narrow, because the counterpositive$_1$ limited by locus$_1$ to s is not in this case described by mutual absence$_1$ since it is described by a constant absence. Counterpositive$_1$ is described by mutual absence$_1$ when it is limited by a relation of essential identity only.

NOTES: The objection here considered presupposes the acceptance of the theorem

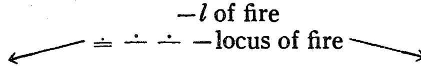
$$‘\dot{-}\ \dot{-}x \doteq x’.$$

Raghunātha accepts this (*P.T.N.*, pp. 55–56; the text is corrupt but that he accepts the theorem is clear), while others, among them Rāmabhadra (*P.T.N.*, Ṭīkā, The Pandit, July-Sept. 1912, p. 109) denied it.*

If ‘$\dot{-}\ \dot{-}x \doteq x$’, then ‘$\dot{-}\ \dot{-}\ -x \doteq -x$’ and this occasions the following difficulty:

s: fire h: smoke

$-l$ of fire



ls: l of fire lh: mountain

$-$locus of fire resides in locus of fire (e.g., mountain), for nothing resides in itself except by a relation of essential identity and the denial of essential identity is ‘$\dot{-}$’, not ‘$-$’. However, taking $-$locus of fire in its form of $\dot{-}\ \dot{-}\ -$locus of fire, a *mutual* absence limited by locus$_1$ to fire resides in mountain. Accordingly, h resides in what is other than locus of s and the inference appears false.

The difficulty is solved by the restriction ‘and is described by mutual absence$_1$’. The c of ‘$\dot{-}\ \dot{-}\ -$locus of fire’ is ‘locus of fire’ as well as ‘$\dot{-}\ -$locus of fire’, and ‘locus of fire’ is described not by a mutual absence but by a constant absence (viz., $-$locus of fire). Thus it is immaterial if h occurs in the locus of $\dot{-}\ \dot{-}\ -$locus of fire.

TEXT 101.5–9 (BI.47.4–8): Sādhyavattvaṃ ca sādhyatâvacchedaka-sambandhena bodhyaṃ, tena vahnimān dhūmād ity-ādau vahnimattvâvacchinna-pratiyogitākasya samavāyena vahnimato ’nyonyâbhāvasyâdhikaraṇe parvatâdau dhūmâder vṛttāv api nâvyāptiḥ. Sarvam anyat prathama-lakṣanôkta-diśâvaseyam. Yathā câsya na tṛtīya-lakṣaṇâbhedas tathôktam tatrâivêti samāsaḥ.

TRANSLATION: And locus$_1$ to s is to be understood as limited by Rs_1. Thus the definition will not be too narrow where [there is a valid inference] such as

* The reason for denying it is that in ‘$\dot{-}\ \dot{-}x \doteq x$’ the mutual absence possesses presence$_1$ (*bhāvatva*) whereas in ‘$\dot{-}\ \dot{-}\ -x \doteq -x$’, the mutual absence possesses relational absence$_1$ (*saṃsargâbhāvatva*). To say that ‘a mutual absence $\doteq$ that which has presence$_1$ and a mutual absence $\doteq$ that which has absence$_1$’ is to misuse the term ‘$\doteq$’ (cf. II, § 42, para. following example 3). The reason Raghunātha gives for accepting it is that otherwise there would be an infinite series; each mutual absence ($\dot{-}\ \dot{-}\ \dot{-}x$, $\dot{-}\ \dot{-}\ \dot{-}\ \dot{-}x$, etc.) would be a new entity.

'[It] posess(es) fire because [it possess(es)] smoke', even though smoke etc. occurs on a mountain etc. which is a locus of –locus of fire by inherence, a mutual absence to which the counterpositive$_1$ is limited by locus$_1$ to fire. All else is to be worked out as indicated under the First Definition. We have stated under the Third Definition how this one differs from it.

So much in brief.

NOTES: This insertion corresponds to Insertion 3 of the First Definition (29.1–4).

THE SUMMING UP

TEXT 101.10–18 (BI.47.8–48.7): Sarvāṇy eva lakṣaṇāni kevalānvayy avyāptyā dūṣayati kevalānvayiny abhāvād iti. Pañcānām eva lakṣaṇānām idaṃ vācyaṃ jñeyatvād ity-ādi-vyāpya-vṛtti-kevalānvayi-sādhyake, [1]dvitīyâdi-lakṣaṇa-catuṣṭasya tu[1] kapi-saṃyogâbhāvavān sattvād ity-ādy-avyāpya-vṛtti-sādhyake 'pi câbhāvād ity arthaḥ, sādhyatâvacchedaka-sambandhâvacchinna-sādhyatâvacchedakâvacchinna-pratiyogitāka-sādhyâbhāvasya, sādhyatâvacchedaka-sambandhena sādhyavattvâvacchinna-pratiyogitākânyonyâbhāvasya câprasiddhatvāt, kapi-saṃyogâbhāvavān sattvād ity-ādau niravacchinna-sādhyâbhāvâdhikaraṇatvasyâprasiddhatvāc cêti bhāvaḥ. Tṛtīya-lakṣaṇasya kevalānvayi-sādhyakâsattvaṃ ca tad-vyākhyānâvasara eva prapañcitam.

VARIANT: (1) BI. omits.

TRANSLATION: Since all these definitons are too narrow to apply where *s* is universal-positive, our author criticizes them all with the words "since [pervasion] is not any of these where *s* is universal-positive". His meaning is (*a*) that pervasion is not any of the five definitions where *s* is of complete occurrence and universal-positive, as in such valid inferences as '[It] (is) nameable because it (is) knowable', and (*b*) that pervasion is not any of the last four definitions where *s* is of incomplete occurrence and universal-positive, as in such valid inferences as '[It] possess(es) absence of contact with a monkey, because [it possess(es)] reality'; [(*a*) follows] from the fact that [in such cases] one can find no example of a $-s$ to which the counterpositive$_1$ is limited by Rs_1 and gs_1 [as is demanded by Definitions 1, 2, and 4], nor can one find an example of a mutual absence to which the counterpositive$_1$ is limited by locus$_1$ to *s* this locus$_1$ being limited by Rs_1 [as is demanded by Definition 5], and [(b) is] due to the fact that in such [inferences] as '[It] possess(es) absence of contact with a monkey, because [it possess(es)] reality', one can find no example of unlimited locus$_1$ to *s*. And how the Third Definition fails to apply where *s* is universal-positive has been expounded by us in our comment on that definition.

NOTES: According to the BI. text (see Variants) all five definitions fail where *s* is of incomplete occurrence and universal-positive as well as where *s* is of com-

plete occurrence and universal-positive. In its favor is the fact that Mathura seems to admit this elsewhere (61.2–4). On the whole, however, the K. reading seems to me the likelier, for there would be no point in Mathura's making a distinction here between *sādhyas* of complete and incomplete occurrence unless he intended to make a distinction between the definitions which fail in the one case and those that fail in the other. If we take the K. reading, we must suppose that Mathura accepts the Second Variant Interpretation of the First Definition (83.1–5).

The specification that $-s$ must be described by a c_1 limited by gs_1 and Rs_1 is given by Insertions 3 and 4 for Definition 1 (29.1–4), is not actually given but must be assumed for Definition 2, and is given at 96.5–9 for Definition 4. The specification of ∸locus of *s* is given at 100.1–7 for Definition 5.

TEXT 101.18–20 (BI.48.7–10): Etac côpalakṣaṇam. Dvitīye kapi-saṃyogy etad-vṛkṣatvād ity-ādāv apy avyāptir adhikaraṇa-bhedenâbhāva-bhede mānâbhāvena kapi-saṃyogavad-bhinna-vṛtti-kapi-[1]saṃyogâbhāvavati vṛkṣa etad-vṛkṣatvasya vṛttitvāt[1].

VARIANT: (1) BI., -saṃyogâbhavo 'pi dravya-vṛttiḥ kapi-saṃyogâbhāva eva tadvad-vṛttitvād etad-vṛkṣatvasya.

TRANSLATION: Gaṅgeśa's criticism implies more. The Second Definition also fails to apply where [there are valid inferences] such as '[It] possess(es) contact with a monkey, because it (is) this tree', for there is no evidence for believing that absences differ as their loci differ. Accordingly, the tree is a locus of the [same absence, viz.,] —contact with a monkey [as the absence] which occurs in what is different from locus of contact with a monkey; and this-tree-ness occurs in this tree.

NOTES: One must suppose that the Second Definition is drawn on the theory that absences differ according to their loci, for otherwise the term '$-s$' would be useless in it. But this theory is false; cf. notes to 89.1–4.

TEXT 101.20–102.4 (BI.48.10–14): Na ca sādhyavad-bhinna-[1]vṛttitva[1]-viśiṣṭa--sādhyâbhāvavad-avṛttitvaṃ vaktavyam evaṃ ca vṛkṣasya viśiṣṭâdhikaraṇatvâbhāvān nâvyāptir iti vācyam, sādyâbhāva-pada-vaiyarthyâpatteḥ, sādhyavad--bhinna-vṛttitva-viśiṣṭavad-avṛttitvasyâiva samyaktvāt, sad-dhetau hetv-adhikaraṇe viśiṣṭâdhikaraṇatvâbhāvād evâsambhavâbhāvāt.

VARIANT: (1) K., -vrttitvā-.

TRANSLATION: [Objection.] One should interpret [the definition to mean]: —occurrent$_1$ described by locus of that $-s$ which is qualified by occurrent$_1$ to that which is other than locus of *s*. Now the definition will not be too narrow, for there is no locus$_1$ to [such] a qualified entity resident in tree.

[Answer.] No, for in that case the word '$-s$' would be useless inasmuch as the meaning could be properly expressed by '—occurrent$_1$ described by the locus of that which is qualified by occurrent$_1$ to that which is other than locus of *s*'.

Such a definition would not be impossible, for by it a valid inference would appear valid, simply from the fact that in locus of *h* there would be no $locus_1$ to such a qualified entity.

NOTES: The suggestion and the reason for rejecting it are repeated from 91.1–92.6. The last sentence only is new and is added for this reason:

In the Second Definition understood according to the 'new interpretation' (88.1–3) the word '–*s*' was shown to be necessary to avoid an impossibility (cf. 90.3–5). An objector might now say that the meaning could *not* be properly expressed by '*sādhyavad-bhinna-vṛttitva-viśiṣṭavād-avṛttitva*' since this omits '–*s*' and would therefore be impossible.

The answer is that it is not impossible, for we have not simply omitted '–*s*'; we have replaced it by '*viśiṣṭa*'. Taking the inference by which '–*s*' was shown to be necessary:

s:	fire	$substance_1$		*h*:	smoke
ls:	mountain	*l* of $substance_1$:	lake		
		:	mountain		

smoke occurs in mountain which is a locus of substance-ness which occurs in that which is different (lake) from locus (mountain) of *s*, but

mountain is not a locus of substance-ness qualified by $occurrent_1$ to what is different from *ls*. Only lake etc. is a locus of this qualified substance-ness and smoke does not occur in a lake. As the text here puts it, $locus_1$ to the qualified entity will not reside in locus (mountain etc.) of *h*.

TEXT 102.4–6 (BI.48.14–17): Tṛtīye sādhyavat-pratiyogitākânyonyâbhāva-mātrasya ghaṭakatve [1]cālanīya[1]-nyāyenânyonyâbhāvam ādāya [2]nānâdhikaraṇa[2]-sādhyake vahnimān dhūmād ity-ādāv avyāptiś cêty api bodhyam.

VARIANT: (1) BI., cālanī-; (2) BI., nānâdhikaraṇaka-.

TRANSLATION: It is also to be understood that if the Third Definition is composed simply of '[*h* not having a locus in common with] a mutual absence whose counterpositive is locus of *s*', the definition will prove too narrow wherever *s* has more than one locus, as in the case of '[It] possesses(es) fire because [it possess(es)] smoke', for one may select the mutual absences by sifting.

NOTES: Cf. 94.1–5.

TEXT 102.7 (BI.48.18–19): Iti Śrī-Mathurānātha-Tarkavāgīśa-[1]kṛtaṃ[1] Vyāpti-pañcaka-rahasyam.

VARIANT: (1) BI., -viracite Tattva-cintāmaṇi-rahasye Anumāna-khaṇḍe Vyāpti-vāda-rahasye.

TRANSLATION: Herewith the *Vyāpti-pañcaka-rahasya* of Śrī-Mathurānātha-Tarkavāgīśa.

Section V

EXTRACT FROM RAGHUNĀTHA'S *DĪDHITI* OF THE SECTION COMMENTING ON GAṄGEŚA'S *VYĀPTI-PAÑCAKA*

TEXT 1–2: * Samārabdhânumāna-prāmāṇya-[1]parīkṣaṇa[1]-kāraṇībhūta-vyāpti--grahôpāya-pratipādana-nidānaṃ vyāpti-svarūpa-nirūpaṇam ārabhate nanv ity ādinā.

VARIANT: (1) *R.Gādā.*, -parīkṣā-.

TRANSLATION: With the words "But . . . etc.", our author begins describing the nature of pervasion. This description is immediately necessary to his exposition [, which follows,] of the means of apprehending pervasion, and this in turn is necessary to the thorough discussion which he has undertaken of the validity of the inferential means.

NOTES: This indicates that the relevance (*saṅgati*) of the Vyāpti-pañcaka is of *upodghāta* type (cf. *V.P.R.*, 4.1–4 and notes).

TEXT 3–4: Sādhyâbhāvavad-avṛttitvasyâvyāpya-vṛtti-sādhyaka-sad-dhetāv avyāptim āśaṅkyâha sādhyavad-bhinnêti.

VARIANTS: *R.Gādā.* omits the whole of this, presumably through oversight since Gadādhara notices the passage.

TRANSLATION: Fearing that [the First Definition] "non-occurrent$_1$ [of *h*] to the locus of absence of *s*" will be too narrow where the *h* is correct and the *s* is of incomplete occurrence, he gives [another definition viz., "non-occurrent$_1$ of *h* to the locus of that absence of *s* which occurs in] what is different from a locus of *s*".

NOTES: Cf. *V.P.R.*, 59.1–3 and notes on 59.3–61.2. Neither Jagadīśa nor Gadādhara tells us why Raghunātha does not cure the fault by requiring an unlimited locus$_1$ to $-s$.

TEXT 4–6: [1]Sādhyavad-bhinne yaḥ sādhyâbhāvas tadvad-avṛttitvam arthaḥ[1]. Karmâdau saṃyogâdy-abhāvasya bhinnatve mānâbhāvād āha sādhyavad iti.

VARIANT: (1) *R.Gādā.* omits, apparently by oversight.

TRANSLATION: This means: '$-$occurrent$_1$ [resident in *h*] to the locus of that absence of *s*, which absence occurs in what is different from locus of *s*'. Since there is no evidence that the $-$contact occurring in action etc. is different [from the $-$contact occurring in this tree etc.], he gives [another definition, viz., "*h*'s

* The lines of text are numbered according to *R.Jāg.*, beginning p. 77 and ending p. 82.

having a different locus from that of a mutual absence whose counterpositive is a] locus of *s*".

NOTES: Cf. notes to *V.P.R.*, 89.1–4 and 101.18–20.

TEXT 6–7: Hetoḥ sādhyavat-pakṣa-bhinna-dṛṣṭānta-vṛttitvenâvyapter āha sakalêti.

TRANSLATION: This definition is too narrow, because *h* may occur in other examples of locus of *s* which are different from the *pakṣa*. Accordingly, he gives [another definiton, viz., "*h*'s being the counterpositive of an absence which resides in] all [loci of $-s$]".

NOTES: Cf. *V.P.R.*, 94.1–5 and 102.4–6.

TEXT 7–10: Sākalyaṃ sādhyâbhāvāvati sādhye ca bodhyaṃ sādhyâbhāvo vā sādhyatâvacchedâkavacchinna-pratiyogitāko grāhyaḥ. Tena vipakṣâika-deśa--niṣṭhâbhāva-pratiyogini vyabhicāriṇi nâtivyāptiḥ, na vā nānā-vyakti-sādhyaka--sad-dhetāv avyāptiḥ.

TRANSLATION: (*a*) All-ness is to be understood as a property of $l - s$, and (b) [all-ness must] also [be understood] as a property of *s* or $-s$ must be taken as having its counterpositive$_1$ limited by gs_1. By (*a*) the definition will not be so wide as to apply where a false *h* is the counterpositive of an absence residing in some loci of $-s$, and by (*b*) the definition will not be so narrow as to fail where *h* is correct and *s* consists of several individuals.

NOTES: Example of overpervasion cured by (*a*). False inference: '[It] possess(es) smoke because [it possess(es)] fire'.

s:	smoke	$-s$:	$-$smoke	$-h$:	$-$fire	*h*:	fire
		$l' - s$:	red-hot iron				
		$l'' - s$:	lake				

h is the *c* of an absence ($-h$) which resides in some loci of $-s$ (e.g., lake). Unless we specify 'all $l - s$' the inference will appear valid. All $l - s$ will include a red-hot iron where $-h$ does not occur, and thus the inference will be shown to be false.

Example of nonpervasion cured by (*b*). Valid inference: '[It] possess(es) fire because [it possess(es)] smoke'.

s:	mountain fire	$-s$:	$-$mountain fire
:	kitchen fire	:	$-$kitchen fire
:	etc.	:	etc.

There is no such entity as all $l - s$, for $-s$ consists of specific absences and these have contradictory loci. Cf. II, § 38 and *V.P.R.*, 95.3–8.

If one specifies "all *s*', then $-s$ is a generic absence and therefore there will be such an entity as all $l - s$. Limiting the c_1 to $-s$ by gs_1 likewise has the effect of rendering $-s$ a generic absence.

TEXT 10–12: Avyāpya-vṛtti-sādhyaka-vyāpya-vṛtti-sad-dhetāv avyāpter vyabhicāriṇi câvyāpya-vṛttāv ativyāpter vāraṇāyâbhāva-dvaye pratiyogi-vyadhikaraṇatvam bodhyam.

TRANSLATION: The loci of each absence [$-s$ and $-h$] are to be understood to be different from the loci of the counterpositive of each absence. Thus the definition will not be too narrow where h is correct and of complete occurrence while s is of incomplete occurrence, and the definiton will not be too wide where h is false and of incomplete occurrence.

NOTES: The above furnishes two insertions for the Fourth Definition, one restricting the loci of $-s$, the other restricting the loci of $-h$.

1. We must restrict 'all $l - s$' to 'all loci of $-s$ that are different from loci of s'.

Example (*Jāg.*, 80.21 ff.; *Gādā*, 151.12) of a nonpervasion cured by the above restriction. Valid inference: '[It] possess(es) contact with a monkey because it (is) this tree'.

s:	contact with a monkey	$-s$:	−contact with a monkey	$-h$:	−this-tree$_1$	h:	this-tree$_1$
ls:	this tree	$l' - s$:	this tree				
		$l'' - s$:	quality				

$-h$ does not occur in all $l - s$, for it does not occur in this tree. Without the restriction the inference would appear false. However, $-h$ does occur in all loci of $-s$ that are different from loci of s. With the restriction, the inference is shown to be valid.

2. We must restrict the loci of $-h$ to loci of $-h$ which are different from loci of h.

Example (*Gādā*, 151.13; *Jāg.*, 81.3 is essentially the same) of overpervasion cured by the above restriction. False inference: '[It] (is) earth because [it possess(es)] contact with a monkey'.

s:	earth$_1$	$-s$:	−earth$_1$	$-h$:	−contact with a monkey	h:	contact with a monkey
ls:	earth	$l - s$:	water	$l' - h$:	water	lh:	water
		:	quality	$l'' - h$:	quality	:	earth
		:	etc.			:	etc.

Here h is a c of an absence (−contact with a monkey) which is universal. Accordingly, without the restriction, all $l - s$ will be loci of $-h$ and the inference will appear true. However, not all loci of $-s$ are loci of $-h$ that are different from loci of h, or to put it differently, $-h$ resides in only some $l - s$ (e.g., excluding water etc.) as a *pratiyogi-vyadhikaraṇâbhāva* (an absence whose locus is different from a locus of its counterpositive). Hence, with the restriction, the inference is shown to be false.

TEXT 12–16: Hetv-abhāvo 'pi pratiyogitâvacchedakavâcchinna-pratiyogi-vyadhikaraṇaḥ. Tat-pratiyogitvaṃ ca hetutâvacchedaka-rupeṇa bodhyaṃ. Tena dravyatvâdau sādhye viśiṣṭa-sattâdau nâvyāptiḥ, na vā viśiṣṭa-sattātvâdinā tādṛśâbhāva-pratiyogini sattâdāv atiprasaṅgaḥ.

TRANSLATION: The loci of $-h$ as well [as $-s$] must be different from the loci of that counterpositive [only] which is limited by the limitors of its counterpositive$_1$. And the counterpositive$_1$ [to $-h$] is to be understood as limited by the limitors of h_1. Thus, where s is substance-ness etc., the definition will not be so narrow as to fail when qualified reality [is the h] and will not be so wide as to apply when reality [is the h] even though reality in the form of qualified reality is the counterpositive of an absence as specified.

NOTES: This passage would be hard to understand without the commentators (*Jāg.*, 81.11–82.12; *Gādā*, 152.13–153.21), but the commentators more than do it justice. Let us leave the portion 'as well [as $-s$]' aside for the moment and examine the rest of the insertion. It consists of two parts, the first of which relieves the definition from nonpervasion in one type of inference and the second of which relieves it from overpervasion in another type.

Part 1. 'The loci of $-h$ must be different from the loci of that c only which is limited by the limitors of its c_1'. Notice first that 'limited' is here used to mean 'qualified'; cf. II, § 15, note 43. Without this insertion a fault would arise from the second insertion given in *Ragh.*, 10–12, thus:

Valid inference: 'It (is) a substance because [it possess(es)] reality qualified by the property peculiar to that which is other than quality or action' (cf. *V.P.R.*, 63.6–8 and II, § 41).

s:	substance$_1$	$-s$:	$-$substance$_1$	$-h$:	$-$qualified reality, : $-$reality	h:	qualified reality
		all $l-s$:	quality action generic character etc.				

Qualified reality $\doteq$ pure reality (cf. II, § 41). From this follow two facts:

(a) The c of $-$qualified reality is equally qualified reality or reality.

(b) Qualified reality is a c equally of $-$qualified reality or $-$reality.

Our definition requires that h be the c of *an* absence occurring in all $l-s$. So far so good, for it is immaterial that $-$reality does not occur in all $l-s$ since $-$qualified reality does.

But the second insertion given in *Ragh.*, 10–12 requires that the loci of $-h$ be different from the loci of its counterpositive. Since the c of $-h$ ($-$qualified reality) is also pure reality and pure reality inheres in quality, the $-h$ ($-$qualified reality) that resides in quality appears to be a *pratiyogi-samānadhi-*

karaṇâbhāva (an absence having the *same* locus as its counterpositive). Only the absence of *h* in generic character etc. appears to be a *pratiyogi-vyadhikaraṇâbhava* (see above). Accordingly, our $-h$ occurs as a *pratiyogi-vyadhikaraṇâbhāva* in only some $l-s$, not all, and the inference appears false.

Part 1 of the present insertion cures this fault, for although the absence of qualified reality in quality is not a *pratiyogi-vyadhikaraṇâbhāva*, it *is* a *pratiyogitâvacchedakâvacchinna-pratiyogi-vyadhikaraṇâbhāva* (an absence whose locus is different from a locus of its *c* as limted (i.e., qualified) by the limitors of its c_1). The limitors of the c_1 to 'absence of reality qualified by the property peculiar to that which is other than quality or action' are 'reality-ness' and 'the property peculiar to that which is other than quality or action'. Quality is not a locus of an entity thus limited, but is a locus of the absence of an entity thus limited. In the preceding, notice that while there is no essential difference between reality and qualified reality, there is a difference between their loci and there is a difference between their qualifiers.

Part 2. 'Th c_1 to $-h$ is to be understood as limited by the limitors of h_1'. This corresponds to Mathura's first insertion for the Fourth Definition (96.1–3) and cures an overpervasion which Part 1 would still allow, thus:

False inference: 'It (is) a substance because [it possess(es)] reality' (cf. *V.P.R.*, 96.1–3).

s: substance$_1$	$-s$: $-$substance$_1$		$-h$: $-$reality : $-$qualified reality	h: reality
	all $l-s$: quality action generic character etc.			

If the inference were valid, reality must be the *c* of an absence residing in all $l-s$. Reality is the *c* of $-$reality, which does not reside in all $l-s$. So far so good. But reality is also the *c* of $-$qualified reality and this does reside in all $l-s$. Furthermore, $-$qualified reality resides in all $l-s$ as a *pratiyogitâvacchedakâvacchinna-pratiyogi-vyadhikaraṇâbhāva* (see above) and so appears unexceptionable and the inference appears true.

Part 2 cures this fault by requiring the c_1 to be $\ulcorner gh_1 \urcorner c_1$. Of $-$qualified reality the *c*, qualified reality, is limited (qualified) by the limitors ('reality-ness' and 'property peculiar to that which is other than quality or action') of *its* ($-$qualified reality's) c_1, but these limitors are not the limitors of h_1. Only the limitors of the c_1 to $-$pure reality are limitors of h_1, and quality and action are not loci of $-$pure reality. Thus, $-h$ does not occur in all $l-s$ and the inference is shown to be false.

"As well [as $-s$]": Both Jagadīśa (81.11) and Gadādhara (152.13) say that

by "as well" (*api*) Raghunātha includes $-s$. Both commentators give the following example of an over-pervasion that is hereby cured.

False inference: '[It] possess(es) reality qualified by the property peculiar to that which is other than quality or action, because [it possess(es)] a generic character' (i.e., 'It is a substance because it has a generic character').

s:	qualified reality	$-s$:	$-$qualified reality	$-h$:	$-$generic character	h:	generic character
		:	$-$reality				
ls:	substance						

If quality is included in the loci of $-s$ the inference will be shown to be false, for h is not the c of an absence that resides in quality.

Although quality is not a locus of $-s$ in the form of $-$reality, it is a locus of $-s$ in the form of $-$qualified reality and so would be included in 'all $l - s$' and all would be well, if it were not for the first insertion given in *Ragh.*, 10–12. The trouble is that $-$qualified reality does not reside in quality as a *pratiyogi-vyadhikaraṇâbhāva*. The fault is cured, according to the commentators, by the present insertion, since this $-$qualified reality *does* reside in quality as a *pratiyogitâvacchedakâvacchinna-pratiyogi-vyadhikaraṇâbhāva* (see above).

As to whether Raghunātha really intended to refer to $-s$ by the word '*api*', I hesitate to disagree with such masters as Jagadīśa and Gadādhara, but I do not much like their interpretation. It forces one to put a full stop before '*tat-pratiyogitvam*', which is unnatural. A much easier interpretation would be to take '*api*' as connecting this insertion with the insertions of lines 10–12.

TEXT 16–19: Yatrâika-vyaktikaṃ sādhyaṃ vipakṣo vā tatra nirdhūmatvâdi-vyāpe tattvena sādhye nirvahnitvâdau câvyāptis tatra hetv-abhāvasya vahny-ādeḥ pratyekaṃ yāvad-vipakṣâvṛttitvād ata āha [1]sādhyavad[1] iti.

VARIANT: (1) *R.Gādā*, sādhyavad-anya.

TRANSLATION: But the definition will still be so narrow as to fail where s is a single individual or where $l - s$ is a single individual, and [if, in order to escape these faults, you reinterpret the word 'all',] the definition will still fail where s is 'that which is pervaded by $-$smoke' etc. as such and h is $-$fire etc., for no one [form] of $-h$, [specific] fire, will occur throughout $l - s$. Therefore the author gives [another definition, viz., "non-occurrent$_1$ of h to that which is other than] locus of s".

NOTES: "Where s is a single individual": This objection is not raised by Mathura, since he does not construe 'all' with 's'. Gadādhara's example (153, last line) is '[It] possess(es) this form because [it possess(es)] this taste' (*etad-rūpavān etad-rasāt*); Jagadīśa's (82.12) is '[It] (is) a substance because it (is) earth' (*dravyam pṛthivītvāt*, s = substance-ness).

"Where $l - s$ is a single individual": cf. *V.R.P.*, 97.17–22. Gadādhara's example (154.5) is the same as Mathura's. Jagadīśa's (82.16) is '[It] possess(es)

a property which does not occur in ether, because it (is) other than ether' (*gaganâvṛtti-dharmavān gaganânyatvāt*).

The Fourth Definition requires, according to Raghunātha, (*a*) that we take 'all' with $l - s$ and (b) that we take 'all' with *s* or that we limit the c_1 to $-s$ by gs_1. The first fault pointed out in the passage above arises from the first alternative of (*b*). The second fault arises from (*a*). One might cure the first fault by taking the second alternative of (*b*). One might cure the second fault by defining 'all' as 'without remainder' (*aśeṣa*) instead of 'as many as there are' (*yāvat*); cf. *V.P.R.*, 97.17–22. Accordingly, Raghunātha points out a third fault that will arise even if one cures the first two as suggested: "where *s* is 'that which is pervaded by −smoke' etc. as such" etc.

Mathura (*V.P.R.*, 97.23–98.4) records a simpler inference than the one given here, but basically similar. Mathura's inference is '[It] possess(es) −smoke because [it possess(es)] −fire' (*nirdhūmatvavān nirvahnitvāt*, note that *nirdhūmatva* = *dhūmâbhāva*). This simpler inference certainly shows a fault in the Fourth Definition (cf. notes to *V.P.R.*, 97.23–98.4), but it will not suit Raghunātha's purpose here, for the *s* of the simpler inference is a single individual since all absences are single, and Raghunātha has already said that the definition will fail where *s* is a single individual. In order to fit it to his purpose Raghunātha has modified the simpler inference so that its *s* may be more than one individual.

Raghunātha's inference may be expressed as follows: '[It] possess(es) 'that which is pervaded by −smoke' as such, because [it possess(es)] −fire'. *s* is no longer an absence. Many things are pervaded by −smoke, for example water-ness (*jalatva*), oiliness (*sneha*, this is considered to be a quality peculiar to water) etc.

'As such' (*tattvena*) means 'limited by such-ness' (*tattvâvacchinna*). The reason for including 'as such' can be seen by observing the fault that would occur if it were omitted. Since water-ness (*jalatva*) is an entity pervaded by −smoke, we might infer: 'this possess(es) water-ness because [it possess(es)] −fire' (i.e., this is water because it is not in contact with fire). Obviously the inference is false, for other things besides water lack fire. By the inclusion of 'as such' we can only infer: '[This] possess(es) that which is limited (or qualified) by pervaded-ness by −smoke, because [it possess(es)] −fire' (*dhūmâbhāva-vyāpyatvâvacchinna-dharmavān nirvahnitvāt*). In other words, we can only infer 'it is the locus of *an* entity pervaded by −smoke', we cannot substitute a specific entity that is so pervaded for '*an* entity'.

TEXT 19-20: Atrânonyonyâbhāvasya sādhyavattvâvacchinna-pratiyogitākatvaṃ vyutpatti-bala-labhyaṃ, na hi bhavati nīlo ghaṭo [1]ghaṭânya[1] iti.

VARIANT: (1) *R.Gādā.*, ghatād anya.

TRANSLATION: In this definition, the counterpositive$_1$ to the mutual absence is limited by locus$_1$ to s; this is implied by the very meaning [of the word 'other'], for a blue pot cannot be 'other than a pot'.

NOTES: Cf. para. 4 of notes to *V.P.R.*, 100.1–7.

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The initials and abbreviated names by which works are referred to are here arranged alphabetically in two lists: the first, of books, reports, and articles; the second, of catalogues of manuscripts. Note that in this book when a commentary is referred to by page and line, the passage will be found by counting the lines from the top of *that commentary* on the given page.

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